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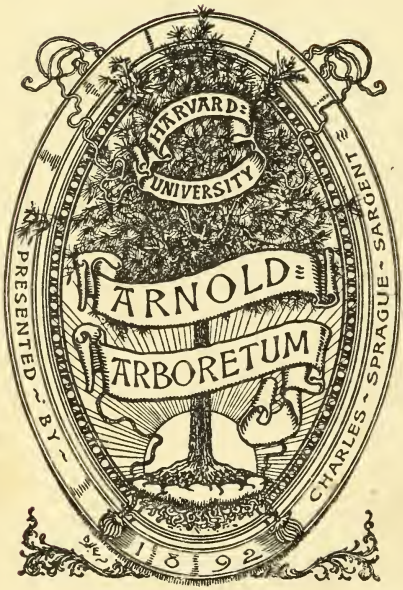

A

TREATISE

ON

FOREIGN VEGETABLES.

CONTAINING

An ACCOUNT of such as are now commonly used in the Practice of PHYSICK.

WITH THEIR

Descriptions, chymical *Analyses*, Virtues, Doses, and various Effects.

Chiefly taken from the

MATERIA MEDICA

OF

STEPH. FRAN. GEOFFROY, M.D.

Professor of Chymistry at PARIS, Member of the *Royal Academy of Sciences*, and Fellow of the *Royal Society*, LONDON.

By RALPH THICKNESSE, M.D.

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THE

PREFACE.

IN the following Abſtract from *Geoffroy*'s Treatiſe on the *Materia Medica*, I have given an Account of ſuch Exoticks or foreign Vegetables as are contained in the new Catalogue of the College, and uſually preſcribed in Medicines.

Among foreign Vegetables I have ranked, not only thoſe that are imported to us from Abroad, but ſome alſo that are produced in great Plenty in *England*; which notwithſtanding, as they grow in other Countries ſpontaneouſly, and here by Culture only, are not to be accounted Natives of this Climate.

In treating of theſe the Order obſerved is conformable to the Plan laid down at the Beginning of the Book;

whereby they are divided into ſeparate Chapters, with reſpect to their Parts uſed in Medicines. The Chapters are ſubdivided into Articles: Wherein I have ſet down, 1. The different Names, ancient and modern, of each Drug; 2. A Deſcription of it; 3. The Marks directing how to chooſe it; 4. The ſynonymous Names, and native Soil of the Plant to which it belongs, if yet aſcertained; 5. Its chymical *Analyſis*, when judged requiſite; 6. Its Virtues, Doſes, with ſometimes its bad Qualities, and Reaſonings upon the Manner in which it operates; and, in the laſt Place, are commonly ſubjoined ſome Forms, according to which it may be conveniently adminiſtred.

In ſhort, I have tranſlated whatever appeared to me in my Author neceſſary to be known by Gentlemen who are engaged in the Study, or Practice of Phyſick; and believe, or at leaſt hope, that nothing, that might prove of real Advantage to them, is omitted.

I have

I have added, by way of Supplement, a few Plants upon which my Author has been ſilent; and have likewiſe adjoined the Hiſtory of others, with us properly reckoned Exoticks, which he has treated of as domeſtick Plants; becauſe, to furniſh a more uniform Account of them, I have been obliged to alter his Method, and to borrow from other Writers on Botany.

Moreover, the Editor of the *Latin* Copy of this Treatiſe has made many Additions to it under the Direction of *M. Bernard de Jeuſſieu*, a curious Naturaliſt; and theſe Additions being ſometimes very pertinent to the Subject of our Inquiry, ſeveral of them are inſerted in the following Sheets, and, to diſtinguiſh them, are included between Crochets, as in the Original.

Having now premiſed a ſummary View of what is done; it may perhaps be expected that ſomething ſhould likewiſe be ſaid, before we conclude, relating to the learned Phyſician from whoſe

Writings the Work is taken: But I ſuppoſe it needleſs to mention any thing more than his Name; ſince his Merits have been publiſhed in an *Elogium* by the ingenious *M. de Fontenelle* *, and his Character, as an Author, is well known. I ſhall therefore only add, that I have endeavoured to make an uſeful Branch of his Knowledge of more general Benefit; and if my Endeavours anſwer this End, by conducing to the Improvement of the *Engliſh* Reader, it will be a Satisfaction to me that I have ſo employ'd them.

* *Hiſtoire de l'Academie Royale des Sciences, Ann.* 1731.

An

An EXPLANATION of Authors Names abridged in this TREATISE.

A.

ACTUAR. Actuarius.
Aët. Aëtius Amidenus.
Androm. Andromachus, de Medicamentis compositis ad affectus externos. Apud Galenum.
Avicen. Avicenna.

B.

Bellon. Obſerv. Bellonii Obſervationes.
Bont. de Med. Ind. Bontius de Medicinâ Indorum.
Breyn. Cent. Breynii Centuriæ.
Breyn Prodr. Ejuſdem Prodromi duo.
Burm. Theſ. Zeyl. Burmanni Theſaurus Zeylanicus, exhibens Plantas in Inſulâ Zeylanâ naſcentes.

C.

Cæſalp. Cæſalpinus.
C. B. P. Caſpari Bauhini Pinax Theatri botanici.
Caſp. Hoff. Caſparus Hoffmannus, de Medicamentis officinalibus, tam ſimplicibus, quam compoſitis.
Cat. H. L. B. & Hort. Lugd. Bat. Cat. Horti Lugduno-Batavi Catalogus, Auctore Paulo Hermanno.
Cateſb. Hiſt. Cateſby's natural Hiſtory of Carolina.
Cluſ. exot. Cluſſii exoticorum, libri 10.
Cluſ. Hiſt. Ejuſdem variarum Plantarum Hiſtoria.
Commel. Hort. med. Amſt. Caſpari Commelini Catalogus Horti medici Amſtelodamenſis.
Commel. Flor. Mal. ejuſdem Flora Malabarica, ſive Horti Malabarici Catalogus.
Corn. Cornuti Canadenſium Plantarum, aliarumque nondum editarum, Hiſtoria.
Corol. Inſt. R. H. Corollarium inſtitutionum rei herbariæ.

D.

Dale Pharmacol. Samuelis Dalei Pharmacologia.

Dale Suppl. ejuſdem Supplementum.

De Bry. Theodori de Bry Florilegium renovatum & auctum.

Dioſc. Dioſcorides.

D. Shaw Catal. Tho. Shaw, Catalogus Plantarum quas obſervavit in Africæ & Aſiæ partibus.

E.

Ephem. Germ. Ephemerides Medico-phyſicæ Germaniæ, ſive Miſcellanea curioſa Medico-phyſica.

F.

F. Hoffmannus. Fredericus Hoffmannus.

Fuchſ. Fuchſius. De Hiſtoria Stirpium Commentarii inſignes, &c. Auctore Leonardo Fuchſio.

G.

Gal. Galenus.

Garz. Garzias ab Horto.

G. Camellus. Georgius Andreas Camellus, è Societate Jeſu : Scripſit Hiſtoriam Stirpium Inſulæ Luſonis, & reliquarum Philippinarum. Extat in Hiſt. Plant. J. Raii. Tom. iii.

Ger. Gerardus.

Grim. Eph. Germ. Grimmius in Ephemeridibus Germanicis.

H.

H. Beaum. Herbertus a Beaumont. Horti Beaumontiani exoticarum Plantarum Catalogus.

Herm. & *Herman.* Paulus Hermannus.

Herm. H. Lug. Bat. ejuſdem Horti Academici Lugduno-Batavi Catalogus.

Herm. Mat. Med. MSS. ejuſdem Materia Medica manuſcripta, deinde Typis mandata ſub titulo Cynoſuræ Materiæ Medicæ.

Herm.

Herm. Muſ. Zeylan. ejuſdem Muſæum Zeylanicum, ſive Catalogus Plantarum in Zeylana ſpontè naſcentium.

Herm. Parad. Bat. Prodr. ejuſdem Paradiſi Batavi Prodromus.

Hern. & Hernand. Hernandez. Nova Plantarum, Animalium, & Mineralium, Mexicanarum Hiſtoria.

Hippocr. Hippocrates.

Hiſt. Oxon. vide *Moriſs.*

H. Amſt. vide *Commel.*

H. Cliff. Hortus Cliffortianus, auctore Linnæo.

H. M. & Malab. Hortus Malabaricus Indicus.

H. R. P. Hortus Regius Pariſienſis, Auctore Antonio Vallot.

I.

I. R. H. Inſtitutiones Rei Herbariæ, Joſephi Pitton de Tournefort.

Joan. And. Stiffer. Joannes Andreas Stifferus. Horti Helmſtadii Catalogus. Ejuſdem Botanica curioſa.

J. B. Joannes Bauhinus. Hiſtoria Plantarum.

Jonſt. Dendr. Jonſtoni Dendrographia, ſive Hiſtoria naturalis de Arboribus & Fruticibus.

K.

Kæmpf. amœn. exot. Engelberti Kæmpferi amœnitates exoticæ.

L.

Lin. gen. Pl. Caroli Linnæi genera Plantarum.

Lin. H. Cliff. Ejuſdem Hortus Cliffortianus.

Linſch. Linſchotus. Itinerarium, ac Navigatio in Orientalem, ſive Luſitanorum Indiam.

Lob. icon. Lobelii Plantarum ſeu Stirpium icones.

Lob. Obſ. Ejuſdem Obſervationes.

M.

M.

Marcgr. Braſ. Marcgravii Hiſtoria rerum naturalium Braſiliæ.

Matth. Matthioli Senenſis Medici Commentarii in ſex libros Pedacii Dioſcoridis.

Mer. Surin. Metamorphoſis inſectorum Surinamenſium, per Mariam Sibillam Merian.

Mon. & Monard. Monardus Medicus Hiſpalenſis, Linguâ Hiſpanicâ compoſuit Medicamentorum ſimplicium, quæ in Europam ab Americâ tranſvehuntur, Hiſtoriam; quam deinceps Latinè vertit Cluſius; & tandem gallicè edidit Antonius Colin, Pharmacopœus Lugdunenſis, unà cum Operibus Garziæ ab Horto & Acoſtæ.

Mor. Hiſt. Oxon. Roberti Moriſoni Plantarum Hiſtoria univerſalis Oxonienſis.

N.

Nicol. Myrep. Nicolaus Myrepſus.

O.

Ovied. Oviedi Indiæ Occidentalis Hiſtoria generalis.

P.

Palud. Annot. in Linſch. Paludani Annotationes in Linſchoti Hiſtoriam Indiæ.

Par. Bat. Prodr. Paradiſi Batavi Prodromus.

Park. Parkinſon.

P. Ægin. Paulus Ægineta, Medicus Græcus inſignis.

P. Herm. Paulus Hermannus.

P. Pom. Pierre Pomet. Hiſtoire generale des Drogues Simples.

Piſ. & Piſon. Braſ. Guillelmus Piſo Batavus, Medicus Amſtelodamenſis. Hiſtoria naturalis Braſiliæ.

Piſ. Mant. arom. Ejuſdem Mantiſſa aromatica.

Plin. C. Plinius ſecundus, in Hiſtoria naturali.

Pluk. Almag. Leonardi Pluknetii, M. D. Almageſtum Botanicum.

Pluk. Phyt. Ejuſdem Phytographia, ſive Stirpium illu ſtriorum, & minus cognitarum icones.

Plum. n. Plant. gen. Plumerii nova Plantarum Americanarum genera.

Plum. Botan. Amer. MS. Ejuſdem Botanicum Americanum, Manuſcriptum.

P. Alp. de Plant. Ægypt. Proſperi Alpini de Plantis Ægypti Liber.

P. Alp. exot. Ejuſdem de Plantis exoticis Libri duo.

R.

Raii Hiſt. Joannis Raii Hiſtoria Plantarum.

Rauwolf. Leonardus Rauwolfius, Medicus Auguſtanus, in Peregrinatione ſua in Oriente plurimas Plantas deſcripſit, & icones adjecit.

S.

Serap. Joannes Serapion, Arabs Medicus celeberrimus.

Shaw. Vide *D. Shaw.*

Sloane. Cat. Plant. Catalogus Plantarum Inſulæ Jamaïcæ, Auctore Hans Sloane.

Sloane Hiſt. nat. Inf. Jamaïc. The natural Hiſtory of *Jamaica* by the ſame.

T.

Tab. Hiſt. Jacobi Tabernæmontani Hiſtoria Germanica tribus partibus, edita cum Figuris.

Tab. icon. Ejuſdem icones.

Theophr. Theophraſtus.

Other Abbreviations.

ÆGYPT. Ægyptiorum.

Anglor. Anglorum.

Arab. Arabum.

Braſiliens. Braſilienſium.

Ejuſd.

Ejuſd. Ejuſdem.
Græc. recent. Græcorum recentiorum.
Græc. veter. Græcorum veterum.
Indor. Indorum.
Nonnul. Nonnullorum.
Off. Officinarum.
Quorumd. Quorumdam.
Sinenſ. Sinenſium.

Weights, Meaſures, &c.

GR. Grain.
℈. Scruple.
ʒ. Drachm.
℥. Ounce.
℔. Pound. In Liquids a Pint.

N. B. The *French* Apothecaries Pound, which is here referred to, contains ſixteen Ounces, and the Scruple, twenty-four Grains. The Ounce and Drachm are divided as thoſe uſed by our Apothecaries.

ā. or *ana.* of each.
B. A. Sand-Heat.
B. M. Water-Heat.
B. V. Vapour-Heat.
Coch. Spoonful.
Gut. Drop.
M. Handful.
Pug. Pugil, as much as can be taken up by two Fingers, and the Thumb.
p. æ. Equal Parts.
q. ſ. A ſufficient Quantity.
q. v. What Quantity you pleaſe.
ſs. Half.

A

TREATISE

ON

FOREIGN VEGETABLES.

THE foreign Vegetables of which we ſhall treat, not being brought over to us entire, but only ſuch Parts of them as are uſed in Medicines; we ſhall therefore, with Regard to thoſe Parts, diſtribute them into diſtinct Claſſes, or Chapters: Whereof the firſtſhall include Roots; the ſecond, Barks; the third, Woods; the fourth, Marine Plants; the fifth, Stalks, Leaves and Flowers; the ſixth, Fruits and Seeds; the ſeventh, liquid and concreted Juices; the eighth, Juices extracted from Plants by Art; and the ninth, fungous Productions, or Subſtances growing upon Plants. We ſhall now ſpeak of theſe in Order.

CHAP. I.

Of ROOTS.

ARTIC. I. *Of* ACORUS.

ACORUS verus, officinis falsò Calamus aromaticus, Gerard. Ἄκορον, *Dioſc. et Gal. Acorus verus ſeu Calamus aromaticus officinarum*, C. B. P. *Calamus aromaticus vulgaris, multis, Acorum*, J. B. The true

Acorus is a long Root full of Joints, about as thick as one's Finger, and somewhat flattish; on the outside, when fresh, of a pale Colour inclining to Green, but afterwards changing into a reddish Yellow. It has an acrid, bitterish, aromatick Taste, yet partaking in some Degree of the Taste of a Leek or Onion, and a fragrant aromatick Smell; though not so pleasant while it is green. It ought to be chosen fragrant and not too old, being unfit for Use when mouldy, rancid, or decayed by long keeping. It grows in moist Places in *Lithuania* and *Tartary*; and likewise by the Sides of Rivulets in *Holland* and *England**.

To this the modern *Greeks* gave the name of κάλαμος ἀρωματικος, though it is entirely different from the plant which was so called by *Dioscorides* and *Galen*†.

The Root of Acorus, in Distillation, yields a considerable Quantity of essential Oil, and some Portion of volatile urinous Spirit: Whence it is evident that it abounds with a volatile aromatick oily Salt.

Dioscorides ascribles to it a Virtue of heating, provoking Urine, relieving Pains of the Side, Breast and Liver, dispersing indurated Tumours of the Spleen, assuaging the Gripes, and of curing Stranguries and the Bites of Serpents; and he asserts that

* It grows in *Cheshire* and *Surry*, and therefore is not, properly speaking, an Exotick; yet I have here considered it as such, because what we use of it in our Shops is imported from Abroad.

† The κάλαμος ἀρωματικος of *Dioscorides* and *Galen*, is the Stem of an arundinaceous Plant, hollow like a common Reed geniculated and slender, being about as thick as an Oat-Blade, or Goose-Quill, of a pale yellowish Colour without, and white within, containing a fungous light Pith, like a Spider's Web rolled up together. It has an agreeable bitterish Taste and fragrant Smell. This is the *Calamus aromaticus* which *Galen* orders in the *Theriaca*.

it

it is an uſeful Ingredient in all Antidotes whatſoever. It is commended by moſt Phyſicians to ſtrengthen the Stomack, diſcuſs Flatulencies, appeaſe Gripings of the Belly, reſolve Obſtructions of the Womb and Spleen, promote the *Menſes*, and to increaſe the Motion of the Blood and Spirits; and it is alſo reckoned alexipharmack.

It is uſually given either in Subſtance or Infuſion: In Subſtance, from gr. xij. to ʒſs in Infuſion to ʒij.

Take of the Root of Acorus in Powder gr. xv. Elecampane gr. x. Ambergreaſe gr. iij. Sugar-candy ℈j. Mix, and make a Powder, or with q. ſ. of the Syrup of Quinces make a Bolus. This is a good Remedy in Weakneſs of the Stomach.

Take of the Root of Acorus ſliced ʒij. Infuſe in ℥vi. of ſtrong Wine or warm Water, and give the ſtrained Liquor to raiſe the Appetite, appeaſe a flatulent Colick, and to prevent contagious Diſtempers.

The Roots candied are agreeable to the Palate and Stomach. They are commended in Catarrhs to dry up and waſte the ſuperfluous Moiſture; and the *Turks* eat them in a Morning againſt the Contagion of noxious Air.

ARTIC. II. *Of* ANGELICA.

Angelica Sativa, *C. B. P. Imperatoria Sativa*, *Inſt. R. H.* The Root of Angelica is three Fingers thick, full of Fibres, on the outſide of a dark Colour and wrinkled, but within white, ſoft and ſucculent, having an acrid, bitter Taſte, and a pleaſant aromatick Smell. It is brought from *Bohemia*,

the *Alps*, the *Pyrenean* Mountains, and alſo from the Hills of *Auvergne**. For Uſe we prefer it when large, of a dark brown Colour on the outſide, white within, not carious, of a fragrant Smell ſomething like Muſk, and an acrid, aromatick Taſte.

In a chymical Analyſis, from four Pounds fourteen Ounces of the freſh Roots of Angelica, were obtained about ten Ounces of urinous Phlegm; three Pounds ſix Ounces of acid Phlegm, and one Ounce of eſſential and thicker Oil together. The *Caput Mortuum* weighed ſix Ounces and an Half, from which were got three Drachms fifty-four Grains of lixivial Salt merely alkaline, and ſix Drachms twelve Grains of inſipid Earth. We could obſerve no Appearance of any volatile concreted Salt, but the Leaves of the Plant, being diſtilled, afforded ſome Grains.

From this Analyſis, as alſo from its acrid, bitter, aromatick Taſte, and fragrant Smell, it is evident that the Root of Angelica conſiſts of a Salt approaching to Sal Ammoniack mixed with a large Proportion of Oil, and a ſmall Quantity of Earth: But theſe Principles are not ſo intimately combined as in ſome artificial Compounds of the like Nature; as, for Inſtance, in a Mixture of the *Spiritus volatilis oleoſus* with the dulcified Spirit of Vitriol or of Salt, if a ſmall Portion of Earth be added to give them Solidity.

Angelica is accounted ſtomachick, cordial, ſudorifick, vulnerary and alexipharmack. It is good againſt Poiſons, in malignant Diſtempers and the Plague. The Root and Seed are preferred to the other Parts of the Plant. As a Preſervative againſt the Plague, the Root macerated in Vinegar is held to the Noſtrils, or under the Tongue and chewed,

* The beſt, and what is generally uſed in *England*, comes to us from *Spain*.

or the Vinegar is drank in the Morning on an empty Stomach. In Times of Peſtilence, being reduced to Powder, it is ſcattered upon Clothes, to prevent their taking Infection.

Take of the Root of Angelica ʒj. Make a Powder, and give it in a Glaſs of ſtrong Wine. Or,
Take of the Root of Angelica in Powder ʒſs. *Venice* Treacle ʒj. Mix, and let them he taken in a Draught of *Carduus* or *Angelica*-Water, and be repeated every ſixth Hour, to promote Sweat in the Plague.

The green Root candied with Sugar, as alſo the Foot-ſtalks of the Leaves peeled and candied, being taken in a Morning, are commended againſt the Plague and Contagions of the Air, and to cure cold Affections of the Breaſt and Lungs. They are likewiſe chewed in the Mouth to correct an offenſive Breath.

ARTIC. II. *Of* BIRTHWORT.

Cicero tells us that Birthwort took the Name of *Ariſtolochia* from one *Ariſtolochus*, who firſt diſcovered it. *Ariſtotle*, on the contrary, ſays it was ſo called from *Ariſtolochia*, a certain Woman. But *Dioſcorides* affirms the Name to have been derived from its Virtue of promoting the *Lochia* (viz.) Ἀριστη ταῖς λοχείαις which indeed is moſt probable.

Dioſcorides and *Galen* have mentioned three Species of Birthwort, and *Pliny* four; of which we ſhall proceed to give an Account.

1. *Ariſtolochia rotunda*, *Off.* Ἀριστολοχία στρογγύλη, *Dioſ. et Gal. Ariſtolochia prima ſeu fœmina*, *Plin.* Round Birthwort is a ſolid, tuberous Root, three Inches thich, roundiſh, wrinkled, and furniſhed with ſome Fibres, of a brown Colour without, and

a pale Yellow within, and covered with a thick Bark. It is acrid, aromatick, and leaves a nauſeous Bitterneſs upon the Tongue.

It ought to be choſen well preſerved, heavy, not too much wrinkled, full and firm, having its natural Smell and Taſte quick and ſtrong, not falling into Duſt when broken, nor mouldy, carious, nor worm-eaten. Which Marks of Goodneſs are alſo applicable to other Roots.

The Plant is called *Ariſtolochia rotunda, flore ex purpurâ nigro*, C. B. P. *Ariſtolochia rotunda*, J. B. It grows in *Languedoc* and *Provence* *.

2. *Ariſtolochia longa*, *Off.* Ἀριστολοχία μακρὰ *et* δακτυλίτις, *Dioſc. et Gal.* *Ariſtolochia altera ſeu mas*, *Plin.* Long Birthwort is an oblong cylindrical Root, as thick as one's Thumb, and ſometimes as thick as one's Arm, and a Foot long, wrinkled, of a brown Colour without, and yellowiſh within, having a Taſte and Smell like round Birthwort, but weaker.

The Plant is called *Ariſtolochia longa vera*, C. B. P. *Ariſtolochia longa*, J. B. It grows in the ſame Places with the former.

3. *Ariſtolochia Clematitis*, *Off.* Ἀριστολοχία κληματῖτις, *Dioſc. et Gal.* Ἀριστολοχία λεπτὴ, i. e. *tenuis ejuſdem Gal. et Andromach.* *Ariſtolochia tertia ſeu Clematitis*, *Plin.* Creeping Birthwort is a long Root, ſpreading its Branches a great Compaſs in the Earth, which are very numerous and ſlender, being ſcarce as thick as a Gooſe-quill, of a brown Colour and yellowiſh within. It has a ſtronger Smell than the two former, and a bitter Taſte, which, from the Subtilty of its Parts, is immediately perceptible.

* It likewiſe grows, with the three following *Species*, in *Spain*, *Italy*, and other warm Climates.

The Plant is diſtinguiſhed *Ariſtolochia Clematitis recta*, C. B. P. *Ariſtolochia Clematitis vulgaris*, J. B. *Ariſtolochia Sarracenica*, *Dodon.* It grows plentifully in *Languedoc*, about *Montpellier*, from whence the dry Root comes to us. It is alſo found about *Paris*.

4. *Ariſtolochia tenuis vel Piſtolochia*, *Off.* *Ariſtolochia quarta*, *ſeu Piſtolochia et Polyrrhizos*, *Plin.* Small Birthwort is a Root compoſed of many long, ſlender Fibres, depending from one common Head, of a yellowiſh Colour, an aromatick Smell not unpleaſant, and an acrid, aromatick Taſte. This ſeems to have been a Stranger to *Dioſcorides* and the ancient *Greeks*.

The Plant to which this belongs is the *Ariſtolochia Piſtolochia dicta*, C. B. P. *Ariſtolochia pollyrrhizos*, J. B. *Piſtolochia*, *Dodon.* It grows in *Languedoc*.

The Roots of Birthworts, in a chymical *Analyſis*, afford a large Quantity of Oil and Earth, no volatile concreted Salt, a moderate Quantity of urinous Spirit, and a great deal of acid Phlegm. The fixt Salt, extracted from their Aſhes, rendered the Solution of corroſive Sublimate foul and milky, not yellow. Moreover, the Juice of theſe Roots ſtains blue Paper red, or Paper which has been dipped in the Juice of Turnſole. Whence it appears, that their Virtues are owing to a certain eſſential Salt, compounded of Earth, more than ſaturated with acid Salt, and combined with a moderate Portion of Ammoniacal Salt, and a large Quantity of Sulphur.

The round and long Birthworts are much uſed in Phyſick, but the creeping and ſmall Birthworts are ſeldom met with in Preſcriptions*. The two

* The long and creeping Birthworts are now the only Sorts retained in the *London* Diſpenſatory.

firſt are diſcutient, attenuating and moderately deterſive. Round Birthwort, however, is ſuppoſed to have finer Parts, and to be more efficacious. Therefore (ſays *Galen*) where gentle Deterſion is required, the *long* is more convenient; as for Ulcerations of the fleſhy Parts, and in Fomentations for the Womb. But when we propoſe to reſolve thick Humours, the *round* is preferable.

All the Birthworts are cephalick, thoracick, uterine, vulnerary, and alexipharmack. The *round* is univerſally allowed to be more attenuating than the *long*; and the *long*, on the contrary, is more powerfully deterſive than the *round*. Wherefore, in Affections of the Breaſt from thick Humours, in Flatulencies and colick Pains, in Obſtructions of the Spleen and Womb, and in Ruptures of Veſſels to diſſolve grumous Blood, round Birthwort ought to be uſed; for it draws off various Excrements, by the *Menſes*, *Urine*, and Emunctories of the Skin. On the other Hand, in Wounds and ſordid Ulcers, in the Scab and other cutaneous Diſeaſes, long Birthwort is preferable, being uſed in Lotions; and in the ſame Form is good to deterge *Fiſtulas*. But the principal and moſt excellent Virtues of both conſiſt in promoting the menſtrual Purgations, and in cleanſing the Womb after Delivery; and on this Account they are commended by *Hippocrates* in his Book on the Diſeaſes of Women. Yet we muſt take Care not to give them to pregnant Women, for they provoke Abortion. *Simon Paulli* propoſes a Decoction of the Root of round Birthwort to reſolve the tartarous Mucilage in a ſcorbutick Aſthma. Externally in Ulcers of the Legs, he wonderfully extols long Birthwort boiled in the diſtilled Water of *Speedwell*; and *Tragus* recommends a Decoction of it in Wine to cure Ulcers of the genital Parts.

Theſe

These Roots being disagreeable to take, by Reason of their Bitterness, are seldom prescribed in Decoction or Infusion for internal Use; but are often given in Powder from ℈j. to ʒij.

Take of round Birthwort ʒiij. Cinnamon ʒj. Saffron ℈j. Mix and make an Electuary with q. s. of the Syrup of Mugwort. The Dose is ʒj. every fourth Hour to promote the *Lochia.*

Take the Roots of Marsh-Mallows, Bryony, long and round Birthwort, ana ℥ij. the Leaves of Mercury, Mugwort and Savin, ana M. j. the Flowers of Camomile, Melilote and Tansy, ana P. j. Let them be cut and bruised s. a. then boiled in q. s. of Fountain-Water, and apply them in Bags to the *Pudenda* and *Abdomen* in Suppression of the *Lochia.*

The *Clematitis*, or creeping Birthwort, may conveniently be substituted for long Birthwort. *Galen*, however, asserts, that it is something weaker than the *round* and *long* in its Virtues, though more fragrant; which is a little surprizing: for the Smell and Taste seem to indicate both the Quantity and the Energy of active Principles. He does not indeed say it is void of Virtue, but only the weakest of the three. Perhaps, the Mildness of its Qualities was the Reason, why both he and the older *Andromachus*, received it into the *Theriaca* preferably to the other *Species.*

ARTIC. IV. *Of* CASSAMUNAIR.

Cassummunair et Casmunar, Anglorum. Risagon, Musæi R. S. Lond. Bingalle Indorum, Philosophical Transact. n. 264. This is a tuberous Root, about as

as thick as one's Thumb or thicker, cut tranſverſly into ſhort Pieces, and encompaſſed with geniculated Circles, as it were, like Galangal; of an aſhy Colour on the outſide, but within yellowiſh, and of a ſubacrid, bitteriſh, aromatick Taſte, and fragrant Smell.

The *Engliſh* bring it from the *Eaſt-Indies*, and highly extol its Virtues; but of what Plant it is the Root I know not, for *Caſſummunair* is a fictitious Name, given it by ſome *Engliſh* Phyſician to conceal the Plant.

We may conjecture from its fragrant Scent, and pungent, acrid, aromatick Taſte, that its Virtues are chiefly owing to a volatile, oily, aromatick Salt.

It ſtrengthens the Nerves, raiſes and cheers the Spirits, fortifies the Stomach and expels Wind. It is eſteemed, both by the *Indians* and the *Engliſh*, a moſt excellent Remedy in an Apoplexy, Epilepſy, *Vertigo* or Giddineſs, Convulſions, Tremblings, hyſterick Paſſion, hypochondriack Affections, and Gripings of the Bowels. It is given in Subſtance from ℈ſs. to ʒſs. A Tincture is made of it with Spirit of Wine, and likewiſe an Extract. The Tincture is taken in Tea or Wine to gut. xx. or xxx. and the Extract is ordered from gr. vj. to xv.

ARTIC. V. *Of* CONTRAYERVA.

Contrayerva et Drakena, Off. Contrayerva Hiſpanorum, ſive Drakena Radix Cluſii, Park. This Root is an Inch or two in Length and half an Inch thick, hard, denſe, and bunching out into Knobs or unequal Heads, of a reddiſh Colour on the outſide, or inclining to black, wrinkled, and covered on the Top of the Knobs, as it were, with Scales. It has a great Number of ſmall Fibres ſhooting from

from it, whereof ſome are pretty thick and large, of an hard flexible Texture, and when the Plant is old, are extuberated like the main Root. Within it is of a pale Colour, of a ſomewhat aſtringent bitteriſh Taſte, with a gentle ſweetiſh Kind of Acrimony, which may be perceived by holding it ſome Time in the Mouth, and a very gentle aromatick Smell. The tuberous Part of the Root is preferred, and the Fibres, being almoſt void of Taſte and Smell, are rejected. It is called *Contrayerva* by the *Spaniards*, on Account of its Quality of reſiſting Poiſons, for the Word in *Spaniſh* ſignifies *Counter-Poiſon*. It is undoubtedly, in my Opinion, the *Drakena* of *Cluſius*, as moſt Botaniſts allow, notwithſtanding *Caſpar Bauhine*'s Opinion to the contrary; ſince it agrees exactly with his Deſcription. He gave it that Name in Memory of his receiving it from the famous *Drake*, who brought it with him when he returned from his Voyage round the World.

[The Writers on Botany for a long Time gave very uncertain Accounts of the Plant to which it belongs; ſome believing it to be a *Species* of the *Granadilla*, others of the *Commelina*, &c. But Mr. *William Houſton* an *Engliſh* Surgeon, whilſt he was in *America*, gathered the true *Contrayerva*-Root in the Mountains near *Vera-Cruz*, and diſcovered the Plant to be a *Species* of the *Dorſtenia*, which he calls *Dorſtenia*, *Dentariæ radice*, *Sphondylii folio*, *placentâ ovali*, *Philoſoph. Tranſact.* An. 1731. n. 421. Fig. 1. *Dorſtenia*, *Sphondylii folio*, *Dentariæ radice*, *Plum. Nov. gen.* p. 29. *Dorſtenia*, *ſcapis radicatis*, *Linn. Hort. Cliff.* p. 32. *Tuzpatlis*, *Hernand. Hiſt. Plant. Mex.* Lib. v. c. 18. p. 147. *Drakena radix*, *Cluſii Exot.* p. 83. Father *Plumier* found it in the Iſland of *Saint-Vincent* in the Month of *June*. It grows alſo in *Peru* and *Mexico*, from whence it is brought by the *Spaniards*.

Mr.

Mr. *Houſton*, in the Place above quoted of the *Philoſophical Tranſactions*, Fig. 2. mentions alſo another Sort, under the Name of *Dorſtenia, Dentariæ radice, folio minus laciniato, placentâ quadrangulari et undulatâ.* This at the firſt Sight appears to be quite a diſtinct *Species* from the former; but *Linnæus* thinks the Variation in the Leaves and *Placenta*, conſidering the Reſemblance in other Reſpects, not ſufficient to determine it of another *Species.* And of the ſame Opinion is Monſieur *Bernard de Juſſieu*, who aſcribes the different Figure of the *Placenta* to the *Receptaculum commune* unfolding itſelf more or leſs in Proportion to its Maturity.]

Contrayerva is reckoned ſudorifick and alexipharmack. *Cluſius* ſays the Leaves of the Plant are an immediate Poiſon, for which the Root, he tells us, is an Antidote, as alſo for other Poiſons: this, however, is not to be underſtood but of ſuch Poiſons as coagulate the Humours. It ſtrengthens the Stomach, helps Concoction, diſcuſſes Wind, and increaſes the inteſtine or fermentative Motion of the Blood. Some aſſert that it cures malignant Fevers, or even the Plague, preferring it to the Bezoar-Stone, *Venice* Treacle, and all other Antidotes: but, perhaps, they extol its Virtues too much. By its Smell and Taſte it ſeems to be compoſed of a moderate Portion of volatile aromatick oily Salt, ſomewhat intangled in earthy Parts. Wherefore, I think *Herman* commends it in malignant Fevers not without Reaſon, and more eſpecially when they are attended with a Looſeneſs. It is preſcribed in Subſtance to ʒj. and in Decoction to ʒij.

Take of Contrayerva in Powder ʒſs. Prepared Pearls and Hartſhorn ā ℈j. Mix and give them

them in the distilled Water of *Carduus benedictus* or Baum, in Case of a Looseness in the Beginning of the Small-pox. Or

Take of Contrayerva-Root bruised ʒj. red Sanders ʒij. Infuse in ℥vj. of white Wine, and give the strained Liquor.

Take Hartshorn Shavings ʒj. boil in q. s. of Spring-Water to ℔iss. adding towards the End, of Contrayerva Root bruised ʒss. Cochineal ʒss. to the strained Liquor add Cinnamon-Water ʒiss. Syrup of Clove July-Flowers ʒij. Let the Patient take a Draught of this now and then in the Small-Pox, or Measles.

ARTIC. VI. *Of* COSTUS.

Costus or *Costum*, *Latin*, κόστος, *Græcor.* *Kost* or *Chast*, *Arab.* These Names are given to several Roots which it is very difficult to distinguish. *Dioscorides* reckons three *Species* of *Costus* (*viz.*) the *Arabian*, *Indian* and the *Syrian*. The *Arabian Costus*, he says, is of a white Colour and light, with a very sweet Smell, and biting hot Taste; the *Indian* is light, full, and black; and the *Syrian* heavy, of a Colour something like Box, and of a strong Scent affecting the Head.

Galen, *on Antidotes*, commends the white *Arabian* Costus, and in his Book, *concerning the Virtues of Simple Medicines*, speaks of a certain Bitterness in *Costus*, though very gentle; but its Acrimony he says is so great as to produce Ulceration.

Pliny tells us, that *Costus* is the Root of a certain Shrub, and that it has a burning hot Taste and excellent Smell. He makes two Kinds; the *black* and the *white*: of which he says the latter is preferable.

The

The ancient *Arabians*, as *Serapio* and *Avicenna*, in regard of the Diſtinction of this Drug into the *ſweet* and *bitter Coſtus*, which at this Time prevails, are entirely ſilent; having taken whatever they have delivered concerning it from *Dioſcorides*, as if the *Coſtus* then made uſe of were the ſame with that of the ancient *Greeks*. *Serapio*, in particular, has nothing relating to it, but what he tranſcribed from that Author; though *Avicenna* indeed adds ſomething of his own. He ſays, for Inſtance, that the *Arabian* Coſtus is white, but withal has a Tendency to a red or Citron-Colour; that the *Indian* is lighter than the *Arabian*, of a bitter Taſte, with a ſtrong clove-like Smell, and a Colour inclining to black. The *Syrian* Coſtus of *Dioſcorides* he calls *Roman* Coſtus, and ſays it has a Colour like Box, and a ſtrong Smell.

The *Greek* and *Latin* Authors, who have wrote any Thing on the *Materia Medica* for five hundred Years paſt and upwards, mention two Kinds (viz.) *Coſtus dulcis* and *Coſtus amarus*, the ſweet and the bitter Coſtus*. Thus *Actuarius* and the modern *Grecians* diſtinguiſh the κοστὸς γλυκὺς and the κοστὸς πικρὸς; and *Macer* the Poet, *de Speciebus exoticis*, has the following Lines.

Coſti ſunt geminæ Species; gravis una rubenſque,
Eſt et amara nimis: hæc Indica dicitur eſſe.
Altera vero levis, nec amara, colore ſed albo.

Whence it appears, that the Root which at preſent in the Shops is called *Coſtus*, and which alone has

* Theſe are now generally believed to be the ſame Root, only growing bitter with Age, and acquiring a blackiſh Colour; and even *Garcias ab Horto*, *Bontius*, *Acoſta*, and *Cluſius*, were of this Opinion. See *Chomel*, *Abregè de l'Hiſtoire des Plantes*. Tome ii. p. 550.

been

been used for some Ages as the true Sort, is not the same with the *Costus* of the Ancients.

But to make this more evident, we must take Notice that *Dioscorides* speaks of no Bitterness belonging to *Costus*; and though *Galen* does, yet he tells us it is very gentle; and they both observe that it has an acrid, biting, hot or burning Taste. It is true *Avicenna* says, from *Dioscorides*, the *Arabian Costus* is white; but adds of himself, that it has a Tendency to redness, which was the Colour of what was then made use of. He likewise says from *Dioscorides*, that the *Indian Costus* is black; but afterwards adds that it is bitter. *Macer*, on the contrary, describes the *Indian Costus* as having a reddish Colour, and an extremely bitter Taste. Further, the *Costus* of the Ancients had a very strong fragrant Smell, even so as to prove offensive to the Head. They used it in aromatick Compounds and Perfumes; and they burnt it also upon their Altars as Incense. Whence this Line of *Propertius:*

Costum molle date, et blandi mihi Thuris Honores.

And *Pliny* likewise expresses himself thus: "These "Roots are purchased on Account of their Smell, "to mix with Unguents and Dainties, or, If I may "be allowed to say so, for the Sake of Superstition; because, says he, we use *Frankincense* and "*Costus* in religious Worship." Now as this exquisite Fragrancy and strong Smell, taken Notice of by *Dioscorides*, *Galen* and *Pliny*, is not observable in the *Costus* of our Shops, I think we may reasonably conclude that it is entirely different from that of the Ancients.

Moreover, the Druggists are not agreed upon the true *Costus*; since in their Shops we sometimes

times meet with three Sorts, under the Names of the *Arabian*, bitter and ſweet *Coſtus*; which *Pomet*, in his Hiſtory of Drugs, deſcribes thus: "The "*Arabian Cuſtos*, ſays he, is an oblong, heavy "Root, of a gray or whitiſh Colour on the out- "ſide, and reddiſh within, hard to be broken, of "a fragrant Smell, and aromatick bitteriſh Taſte. "The bitter *Coſtus* is thick, denſe, hard, woody, "light, and ſhining, and in Appearance rather "like a Piece of Wood than the Fragment of a "Root. And the ſweet *Coſtus* is a ſmall yellow "Root, reſembling pretty much, in its Colour, "Form and Thickneſs, the Root of Turmerick."

But theſe Deſcriptions are imperfect, or at leaſt they agree not with the *Coſtus* which we now find in the Shops of Apothecaries: For this, which is almoſt univerſally received or ſubſtituted for the *Arabian* or true *Coſtus*, is a Root cut into oblong Pieces, an Inch thick, light, porous, and hard, but of a friable Texture, a little reſinous, of a whitiſh, or ſometimes yellowiſh gray Colour, an acrid, aromatick, bitteriſh Taſte, and fragrant Smell, ſomething like the Smell of *Florentine* Orris or Violets.

According to *Commelinus*, and after him *Dale* in his *Pharmacologia*, it is the Root of a Plant called *Tſiana Kua*, *Hort. Malab.* and *Ponvo Bramanum.* which is the *Coſtus Iridem redolens ſeu Indicus*, C. B. *Coſtus*, *Linn. Hort. Cliff.* Pag. 2. *Paco Caatinga Braſilienſibus*, *Marcgr. Bras.* p. 48. *Piſon. Bras.* p. 98. *Anonyma*, *Mer. Surin.* 36. T. 36. It grows in the Foreſts of *Malabar*, *Braſile*, and *Surinam.*

This Root has a Place amongſt Cephalicks, Expectorants, and Uterines It attenuates and divides the Humours, and provokes Urine and Perſpiration. The Doſe in Subſtance is ʒſs. and from ʒij. to ℥ſs. in Infuſion.

ART.

ARTIC. VII. *Of* TURMERICK.

Of this there are two *Species*; the *long* and the *round*.

1. *Curcuma longa, ſeu Terra Merita, Off. Cyperus Indicus, Zingiberis facie, Dioſc. Cypira, Plin. Crocus Indicus, Arabibus Curcum, Officinis noſtris Radix Curcumæ dictus, Bont.* Long Turmerick is an oblong, ſmall, tuberous, knotty Root, of a yellow or ſaffron Colour, turning Liquors in which it is infuſed yellow; of a ſubacrid bitteriſh Taſte, and a Smell not unpleaſant, being ſomething like that of Ginger, but not ſo ſtrong.

The Plant to which it belongs is the *Curcuma radice longa, Hort. Ludg. Bat. Curcuma foliis longioribus et acutioribus, Breyn.* 2. P. *Manjella Kua, Hort. Malab.* The Root of this plant ripens and is dug up after the Flowers are withered. It is ſo common in the *Eaſt-Indies*, that there is ſcarce a Garden in which it is not cultivated for its Uſefulneſs, being eſteemed a very agreeable Seaſoning for Food; and it is alſo uſed there, as it is in *Europe*, in Dyeing. The Flowers, which have a ſweet Smell, they put into Ointments to rub over their Bodies.

It ſeems to conſiſt of a volatile oily Salt, mixed with a bitter neutral Salt; which are both enveloped in viſcid and terreſtrial Parts. It is reckoned an excellent Medicine for reſolving Obſtructions of the Lungs, Liver, Spleen, Meſentery and Womb; for provoking the *Menſes*, and aſſiſting Delivery: but particularly, it is a ſingular and ſpecifick Remedy in the Jaundice. It is given in Subſtance from ℈j. to ʒj. and in Decoction or Infuſion to ʒij.

Take of Turmerick powered ʒſs. Saffron gr. v. volatile Salt of Hartſhorn gr. x. Syrup of the

five opening Roots or Mugwort q. s. Make a Bolus for the Jaundice and uterine Obſtructions.

Take of Turmerick ʒſs. Troches of Vipers ʒiij. Powder of Rhubarb and Saffron ā ʒſs. Conſerve of the greater Celadine ʒj. Syrup of Fumitory q. s. to make an Electuary; of which ʒij. may be taken twice a Day in the Jaundice. Or,

Take of Turmerick-Root ʒſs. Saffron gr. xv. Rhubarb ʒij. Infuſe them cold for twelve Hours in ℥xij. of ſtrong white Wine, and divide the ſtrained Liquor into two Doſes.

2. The other *Species*, which is called round Turmerick, and by the *Portugueze Ratz de Safrao*, is the Root of the *Curcuma radice rotundâ*, *Parad. Batav. Prodrom. Manja-Kua*, *Hort. Malab.* This is ſomething weaker in its Virtues than the former, and is ſeldom uſed.

ARTIC. VIII. *Of* GENTIAN.

Gentiana, *Off.* Γεντιανὴ, *Dioſc. et Græcor.* The Root of Gentian is about a Foot long, and as thick or ſometimes twice as thick as one's Thumb, pretty much divided, fungous, brown on the outſide, of a yellow Colour within tending to Red *, and an extremely bitter Taſte. It is brought from the *Alps*,

* According to *Mr. Miller*'s Deſcription, it is of a yellow brown Colour. It ought to be choſen with great Care; becauſe a poiſonous Root has been lately brought over with it, which having been put into Medicines unknowingly in its ſtead has produced very bad Effects. It is ſaid to have a ſtronger Smell than Gentian. I have endeavoured to gain a more perfect Knowledge of this Root; but am informed by *Mr. Blackſtone*, Apothecary (a Gentleman very curious and well verſed in botanical Inquiries) that the Plant to which it belongs is not yet aſcertained; ſome affirming that it is the *Thora Valdenſium*, *Lobel.* others the *Solanum lethale*.

Pyre-

Pyreneans, and the Mountains of *Auvergne*, where it grows in great Plenty. When it is much wrinkled, mouldy and blackish within, it is rejected.

The Plant is the *Gentiana major*, *lutea*, C. B. P. *Gentiana vulgaris major Hellebori albi folio.* J. B. *Gentiana*, *Dodon.* This Plant, according to *Dioscorides*, took its Name from *Gentis* who was King of *Illyris*.

The Root, which is the only Part used in Medicines, yields a large Quantity of Oil, Earth, and acid Phlegm, and very little urinous Spirit. Its Virtues are therefore to be ascribed to an acid Salt, partly saturated with an astringent Earth, and partly involved in a large Proportion of Sulphur.

It is said by Physicians to be heating, drying, and detersive; and also alexipharmack, antifebrile and vulnerary. It is esteemed an excellent Remedy against the Bite of a mad Dog, and for this Intention *Dioscorides* orders it to be mixed with the Ashes of Craw-fish and taken in Wine; and some apply it in Powder with *Venice*-Treacle to the Wound: But it is much safer, provided the Wound be fresh, to open it with a Knife, and then to burn it.

Moreover, Gentian opens Obstructions of the Liver, Spleen, and Womb; cures certain Fevers, and sometimes even quartans, a Drachm of it being given in the Beginning of the Paroxysm in Wine, or in the distilled Water of *Carduus benedictus*, the lesser Centory, or Fumitory. Some likewise direct it to be infused, and given every fourth Hour, as we give a Decoction of the Bark; however, I shall venture to pronounce it very much inferior to that for curing Fevers. In common with other Bitters it strengthens the Stomach, cures Loss of Appetite, and helps Digestion; but the Cautions above laid down, concerning the Use of Stomachicks, are to

be obſerved in giving it *. It likewiſe reſiſts Putrefaction and Poiſons, is good in the Plague, and kills Worms. The Doſe is from ʒſs. to ʒij.

Externally it is uſed to deterge Wounds and Iſſues, and the Surgeons make Tents of it for dilating Ulcers.

An Extract is prepared from it, which has been in uſe ever ſince the Time of *Dioſcorides*, having the ſame Virtues with the Root. It is preſcribed from ʒſs. to ʒiv.

Take of Gentian cut ſmall ℈ſs. the Tops of leſſer Centory and Camomile-Flowers ā P. j. the Seeds of *Carduus benedictus* ʒj. Boil them in q. s. of Spring-Water to ℥iv. Strain and make an alterative Decoction, to be taken faſting for eight Mornings in Obſtructions of the Bowels to ſtrengthen the Stomach, and kill Worms. This Decoction may be rendered ſolutive by adding ʒj. of Senna.

ART.

* We are here referred to our Author's Account of the greater and the leſſer Galangal, which I have not inſerted in this Treatiſe, as thoſe Roots are no longer retained in the Diſpenſatory; but the Cautions delivered concerning their Uſe being applicable to many other Drugs, it may be neceſſary, for the Information of the Reader, to tranſcribe them. In regard of theſe aromatick Medicines (ſays he) which are ſo highly cried up for their ſtomachick Virtues, and for aſſiſting Digeſtion, we muſt obſerve, that they ought not to be uſed indiſcriminately in all Caſes of Weakneſs or Crudity of the Stomach; ſince a depraved Concoction may be owing to Cauſes entirely different, or (as they ſay) to different Diſtemperatures of the Part. Sometimes, for Inſtance, the Tone of the Fibres is too lax; ſo that the Stomach diſcharges its Contents very ſlowly into the Inteſtines; whence by too long a Continuance, they either grow ſour, or are converted into a putrid Mucilage. Sometimes the Membranes of the Stomach are diſpoſed to Inflammation, and the nervous Fibres are ſo ſhrivelled up and convulſed, that they are ſcarce able to protrude the Chyle through the *Pylorus*. Sometimes, again, the

ARTIC. IX. *Of* LIQUORICE.

The Liquorice of the Ancients and the Moderns are not the ſame Plant, but two diſtinct *Species*; though both are included under the ſame *Genus*.

The Liquorice of the Ancients Γλυκυρρίζα, *Dioſc.* Ξυθικὴ ῥίζα *Theophras*) differs from our in having a prickly Fruit and many Pods growing together in Cluſters, with a Root, not ſmall and creeping like common Liquorice, but as thick and long as the Arm, ſhooting perpendicularly into the Earth,

the gaſtrick Juice being too much diluted with Serum, and deſtitute of a ſufficient Stock of Spirits, becomes as it were vapid and unfit for the Office of Digeſtion: or, at other Times, it occaſions a bad Digeſtion, by being over-loaded with ſulphureous, ſaline, acrid, or acid Particles. Now theſe Cauſes, ſo different from each other, though they may produce the ſame Effect, require notwithſtanding a different Method of Cure. Therefore, before we venture to give theſe Remedies, we ought to conſider what is the Cauſe why Concoction is not duly performed. For if the Fault be owing to an hot Diſtemperature, an inflammatory Diſpoſition of the Membrances, or a convulſive Tenſion or Spaſms of the nervous Fibres, then Aromaticks are not only uſeleſs, but even prejudicial in the higheſt Degree: and hence it is, that in melancholick and hypochondriack Affections they do Miſchief, and oftentimes bring on a Dropſy. Wherefore, as *Wallæus* very juſty cautions, when we give aromatick Stomachicks, we ought to be exceeding careful in obſerving the Urine; for if this be diminiſhed in Quantity, or changed in Colour, ſo as to become foul or red, theſe Medicines muſt immediately be laid aſide; becauſe an *Aſcites* is then approaching. But in a cold Diſtemperature of the Stomach, or a vapid State of its Juices, theſe Things are given to great Advantage, eſpecially with the inflammable Spirits of Wine, Juniper, &c. They are equally proper alſo when the Tone of the Stomach is relaxed, but chiefly ſuch as are bitter or in ſome Degree aſtringent. Moreover, when the gaſtrick Juice is too thick, aromatick Subſtances, by inciding the viſcid Lymph and ſtimulating the Fibres, may be of Service; yet in this Caſe Diluters are preferable. Theſe Particulars ought to be duly attended to in giving Stomachicks.

and of a much less agreeable Sweetness. It is called *Glycyrrhiza capite echinato*, C. B. P. *Glycyrrhiza Dioscoridis echinata, non repens*, J. B. *Glycyrrhiza vera Dioscoridis, Dodon.* It grows, according to *Dioscorides*, in *Cappadocia* and *Pontus*; and it was the same, or a *Species* very like it, which M. *Tournefort* found in the eastern Countries, and calls *Glycyrrhiza orientalis, Siliquis hirsutissimis, Corol. Inst.*

The Liquorice of the Moderns is distinguished *Glycyrrhiza Siliquosa, vel Germanica*, C. B. P. *Glycyrrhiza radice repente vulgaris, Germanica.* J. B. It grows wild in *Spain, Italy, Languedoc*, and *Gremany*, and is much cultivated in *England.*

The Root, which in the Shops is called *Glycyrrhiza, Liquiritia*, or *dulcis Radix*, is long and divided into Branches, sometimes as thick as one's Finger, being of a brown or ashy Colour on the outside, but within yellow, and full of a sweet Juice.

It tempers Salt and sharp Humours, incrassates the Blood, and cures Coughs and other Distempers of the Breast. It is also serviceable in the Stone of the Bladder or Kidneys, asswaging the Violence of the Pain. Wherefore *Simon Paulli* extols it greatly in these Affections, being given in Powder with the Pulp of *Cassia* or boiled Turpentine. It is so much in Esteem with Physicians, that there is scarce a Ptisan prescribed without it; whether it be designed to calm the inordinate Heat of the Humours, or to soften and obtund their Acrimony. It is likewise joined with other Medicines, as well to moderate their Force, as to render them more agreeable.

Take of whole Barley well cleansed M. j. Boil in ℔iv. of Water to a Consumption of the fourth Part. Then add of Liquorice scraped, bruised, and divided into Shreads ʒj. afterwards

wards boil them till the Liquor is depurated ed; and let the ſtrained Ptiſan be uſed for common Drink.

Note, that a Ptiſan made of dried Liquorice, and boiled to Deſpumation, is much more agreeable, than when prepared from the freſh Root.

Take the Roots of Dog-Graſs and Strawberry ā ℥j. Liquorice ſcraped and bruiſed ʒij. Boil them in ℔iv. of Water to ℔iij. for an opening Apozem.

The Juice of Liquorice is prepared ſeveral Ways; whence we have many different Sorts of it. One Sort is brought from *Spain* in black hard Cakes or Rolls, and covered with Bay Leaves. It is extracted from the Root by boiling it in Water, and evaporating the Decoction to a due Conſiſtence. The other Sorts are prepared in the Shops. Theſe are the *white* and *black* Juices, and that of *Blois*.

The white Liquorice-Juice, termed by ſome *Confectio Rabecha*, is made thus.

Take the Roots of Liquorice and Florentine Orris in Powder ā ʒvj. Starch ℥ij. white powdered Sugar ℥j. Make theſe into a ſtiff Paſte with q. s. of the Mucilage of Gum Tragacanth in Orange-Flower Water, and then forming the Paſte into ſlender Rolls or Tablets lay them in the Shade to dry.

The black Juice thus.

Take the Extract of Liquorice-Root and powdered Sugar ā ℔ij. Gum Arabick diſſolved ʒj. Mucilage of Gum Tragacanth made in Orange-

Flower Water ℥ifs. Mix them together, and form Tablets or Rolls to be dried as the former.

The Liquorice Juice of *Blois* is prepared thus.

Take of Gum Arabick groſly prounded ℔iv. Sugar ℔iij. Liquorice dried, ſcraped and bruiſed ℔ij. Infuſe the Liquorice for twenty-four Hours in ℔xxx. of Water. Divide the ſtrained Liqour into three Parts, in two of which diſſolve the Gum Arabick over a ſlow Fire, and paſs it through an Hair-Sieve; then boil it with the remaining Part of the Liquor to the Conſiſtence of a Plaiſter, adding the Sugar towards the End, and ſtirring it continually to make it white.

ARTIC. X. *Of* HELLEBORE.

Ἑλλέβορος, *vel* Ἑλλέβορον, *vel* Ἑλλέβορας, *Græcor. Helleborus, aut Elleborus, aut Veratrum, Latinor.* Hellebore was a famous Drug among the *Greek* and *Latin* Phyſicians. They diſtinguiſhed two Sorts (*viz.*) the *white* and the *black*; but what they have left us concerning them is ſo full of Obſcurity, that it is hard to determine the Plants from which they were taken. The Hiſtory of Hellebore in *Theophraſtus* is extremely defective, ſo that we can expect but little Light in this Matter from him. The Deſcription which *Dioſcorides* gives of white Hellebore is applicable enough to ours; but what he ſays of black Hellebore is far from agreeing with that of the Moderns. Whence we may conclude, that the black Hellebore of *Dioſcorides* is a Stranger to us, or that, perhaps, his genuine Text has been corrupted.

At this Time, however, we meet with two Kinds of

of Hellebore in the Shops, which are diſtinguſhed, as formerly, by their Colour, into *white* and *black*.

1. *Helleborus albus, ſeu Veratrum album, Off.* White Hellebore of the Shops is an oblong tuberous Root, ſometimes as thick as the Thumb and thicker, of a brown Colour on the outſide and white within, and full of white Fibres, having an acrid, ſomewhat bitter, ſubaſtringent, diſagreeable and nauſeous Taſte.

The Plant is called *Veratrum flore ſubviridi. Inſt. R. H. Helleborus albus flore ſubviridi*, C. B. P. *Helleborus albus flore ex viridi albeſcente*, J. B. *Helleborum album, ſive Veratrum, Lobel. Icon.*

Another *Species* of this Plant is diſtinguiſhed *Veratrum flore atrorubente, Inſt.* R. H. *Helleborus albus flore atrorubente*, C. B. P. *Helleborum album, flore atrorubente, præcox, Lobel. Icon.* It grows common in all the mountainous Parts of *France*, and very plentifully upon the *Alps* and *Pyrenean* Mountains.

2. *Helleborus niger, et Veratrum nigrum, Off.* Black Hellebore is a tuberous knotty Root, with a great Number of denſe Fibres ſpringing from it, of a black Colour without and whitiſh within, having an acrid and bitter Taſte, producing a Kind of *Nauſea*, and a very ſtrong Smell when it is freſh. It is called by the *Greeks Melampodion*, from one *Melampus* a Phyſician, or according to others a Shepherd, who firſt inſtituted Purging, and thence took the Name of καθάρτης or the *Purger*. It is reported, that when the Daughters of *Prætus* were ſeized with Madneſs, he cured them with this Root.

The Plant from which it is taken is the *Helleborus niger, anguſtioribus foliis, Inſt.* R. H. *Helleborus niger flore roſeo*, C. B. P. *Elleborus niger legitimus, Clus. Hiſt.* It grows upon the *Alps* and *Pyrenean* Mountains, and is cultivated in Gardens, as well for Ornament as Uſe.

There

There is alſo another *Species*, which M. *Tournefort* ſuppoſes to be the true black Hellebore of *Hippocrates* and the Ancients; becauſe he met with it common, not only in the Iſlands of *Anticyræ* which lie oppoſite to Mount *Oeta*, and ſeveral other Places thereabouts, but likewiſe in *Aſia* on the Coaſt of the *Euxine* Sea, and at the Foot of the Mountain *Olympus*, &c. This *Species* he calls *Helleborus niger orientalis, ampliſſimo folio caule prælto, flore purpuraſcente*, *Cor. Inſt.* R. H. *Helleborus niger orientalis*, *Bellon.* The Root is like that of the former, but thicker, longer, and void of Smell, though extremely bitter.

Some through Miſtake, for the Roots of the true black Hellebore, ſubſtitute thoſe of the *Helleborus niger*, *tenui folio*, *Buphthalmi flore*, C. B. P. which *Tournefort* ranks under the *Genus* of *Racunculus* or *Crow-foot*, by the Name of *Ranunculus fœniculaciis foliis*, *Hellebori nigri radice*, H. R. *Monſpel. Inſt.* R. H. and both he and *Dodonæus* have obſerved, that the Roots of this are not purgative. Wherefore, inſtead of the true black Hellebore, we ought rather to ſubſtitute the *Helleborus niger hortenſis*, *flore viridi*, C. B. P. or the *Helleborus niger fœtidus*, C. B. P. which are the Sorts that are uſually brought to *Paris* from the Mountains of *Auvergne*.

But in order to diſcover whether the Roots, which are ſold for black Hellebore, have their proper medicinal Virtues, M. *Tournefort* propoſes to infuſe them in a ſufficient Quanity of Spring Water, and afterwards to diſtil them in an Alembick; for if the Water coming over be inſipid, thoſe Roots are to be rejected, as void of Efficacy; but if the Water have a conſiderable Acrimony, they are fit for Uſe.

From the Roots of white Hellebore, in a chymical Treatment, is obtained, firſt a Spirit of a very acrid

acrid Taſte, which coagulates a Solution of Sublimate; afterwards an acid corroſive Liquor, and then a volatile concreted Salt and Oil. But the Quantity of Earth remaining is equal in Weight to a third Part of the Roots. Moreover, by the Juice of white Hellebore the Colour of blue Paper is rendered more lively, in the ſame Manner as when the Paper is dipped in Lime-Water.

Five Pounds of the Fibres of black Hellebore-Root yielded eight Ounces of greeniſh Liquor of a very acrid Taſte; but it produced no Change in the Tincture of Turnſole, or the Solution of Sublimate. After this came over into the Receiver two Pounds, twelves Ounces, and ſix Drachms of Liquor, which by Degrees loſt its green Colour and became more limpid; and was likewiſe deprived of its acrid Taſte, acquiring one that was acid and ſtyptick. This Liquor turned the Tincture of Turnſole not only purple, but even to the Colour of Fire. The laſt four Ounces which came over, raiſed an Effervescence with Spirit of Salt, and precipitated the Solution of Sublimate. The fœtid Oil weighed an Ounce and half, and the *Caput mortuum* ten Ounces; in which were ſix Drachms of fixt Salt, and two Ounces, one Drachm, of *terra damnata*. Further, blue Paper, by being dipped in an Infuſion of this Root, is not rendered more lively in its Colour, but on the contrary more obſcure, inclining to the Colour of a Violet.

Hence it appears, that an alkaline Salt prevails in the Root of white Hellebore; which, on the other Hand, in the Root of black Hellebore, is ſubdued by an Acid. Moreover it appears, that the Root of black Hellebore contains a Kind of ſalino-ſulphureous Spirit, ſuch as is produced by mixing rectified Spirit of Wine with volatile Spirit of *Sal Ammoniac*. This Spirit ariſes the firſt in Diſtillation;

tillation; and though it be volatile, and alkaline, yet it is so involved in Sulphur, that it produces no Change, either in the Tincture of Turnsole, or the Solution of Sublimate. Lastly, if the Distillation be urged at the Beginning by a stronge Fire, there arises, instead of the acrid Spirit, a coagulated Compound consisting of the same Principles.

But the purgative Quality of Hellebore is not to be attributed either to the acid or alkaline Salt alone, or to the Sulphur, but to all these together as they naturally exist in the mixt Body: For as much as an Extract from the Roots with Spirit of Wine is not in the least Degree cathartick: neither is a second Extract made with Rain-Water from the *Residuum* of the former. Whereas an Extract, which is drawn out first with Water, possesses all the Virtues of the Root; for the Water dissolves both the alkaline and tartarous Salts, and afterwards, by the Assistance of those Salt, divides and takes up the sulphureous Parts.

White Hellebore is cathartick and emetick, but extremely violent in its Operation, producing great Uneasiness and Anxiety; and is therefore never given inwardly in the present Practice. Even the Powder being only put into Issues purges the Belly with great Vehemence. The Ancients sometimes ventured to give it, though never but in desperate Cases, when they found all other Medicines ineffectual. Externally it is accounted good in the Itch and other cutaneous Foulnesses, and is a powerful Sternutatory in sleepy Affections.

Black Hellebore was very commonly used as a Cathartick among the Ancients. They reckoned it an efficacious Medicine in Madness and Melancholy, as also in Epilepsies, Apoplexies, Palsies, the Gout, *Elephantiasis*, quartan Fevers, and in all Diseases

Diſeaſes ariſing from black Choler. However, its Roughneſs obliged them to be very cautious how they uſed it; the Patient being always prepared for ſeven Days, before they ventured to give it, by gentle Phyſick and a proper *Regimen*. They likewiſe tried ſeveral Ways to correct it. *Hippocrates*, *on the Diet in a cute Diſeaſes*, orders it to be mixed with Cummin, Aniſe, and other warm and fragrant Subſtances; and *Pliny* mentions a Method of boiling it in Radiſhes, and giving either the Liquor, the Radiſhes, or the Root itſelf. But after all, being unreaſonably given, or in too large a Doſe, it often brought on a Train of direful Symptoms, which ſometimes terminated in the Death of the Patient. The Hellebore growing in the Iſlands of *Anticyræ* was accounted the beſt; inſomuch that it was cuſtomary for People to go thither, that they might be ſure of having the right Sort. Hence *naviga Anticyras* became a Proverb, being as much as to ſay, *Go purge off your Madneſs*. But M. *Tournefort*, who ſeveral Times gave an Extract of this Hellebore, found the Danger attending its Operation ſo great, that he was obliged to forbear the Uſe of it. On Account of this dangerous Quality Hellebore is ſeldom given at preſent, eſpecially ſince the emetick and cathartick Preparations of Antimony have been in Uſe; which, in my Opinion, are much ſafer, and no leſs efficacious. However, as the Hellebore which we have in *France*, is not near ſo rough as that employed by the Ancients, it may be given in Subſtance from gr. xv. to ℈ij. in Decoction from ℥j. to ℥ij. and in Extract, prepared with Rain-Water, from gr. xij. to ℈j. and we muſt obſerve, that Cream of Tartar, Sal Prunel, Tamarinds, Oxymel, and the Juice of Quinces, are better Correctors of it than Aromaticks.

Take

Take of the Fibres of black Hellebore cut ſmall ʒſs. Pour upon them ʒvj. of boiling Milk. Boil them gently, and then leaving them all Night in Infuſion, give the ſtrained Liquor in the Morning.

Take of the Fibres of black Hellebore ʒj. boil in ʒiv. of Rain-Water to a third Part. To the ſtrained Decoction add ʒij. of Honey well clarified. The Doſe is a Spoonful every other Day, for Madneſs.

Take of the Extract of black Hellebore gr. xv. dulcified Mercury Sublimate and prepared Amber ā gr. xij. Cream of Tartar ℈j. mix and make a Bolus with q. s. of the Pulp of Caſſia freſh drawn.

Take of the Extract of black Hellebore ℈j. Cream of Tartar ʒſs. Quince-Marmalade q. s. Make a Bolus.

Some Phyſicians commend this Root as an excellent Alterative, and ſuppoſe that it conduces more towards the Cure of Melancholy, by diſſolving the Viſcidity of the Humours, than by purging. It is reckoned externally a good Detergent in the Shingles, Scab, and leprous Sores; and *Galen* extols it for removing the Calloſity of Fiſtulas *.

* By the Account above given it is evident, that not only the black Hellebore of the Ancients, but alſo what the *French* make uſe of, is vaſtly different from ours. For the black Hellebore of the *Engliſh* Shops purges very little, but powerfully divides and attenuates the Humours; and in plethorick Conſtitutions, ſeldom fails to promote the *Menſes*. Moreover, according to Dr. *Freind* in his Hiſtory of Phyſick, vol. 2. p. 105. it ſometimes proves a moſt efficacious Diuretick in the Dropſy.

ART.

ARTIC. XI. *Of* JALAP.

Jalapa, Jalapium, et Mechoacanna nigra Off. Jalap is an oblong Root, in Figure ſomething reſembling a Top or Turnip, thick, denſe, heavy, and cut tranſverſly into Pieces, of a dark Colour without, and brown or aſh-coloured within, reſinous, hard to be broken, and in Taſte ſomewhat acrid and nauſeous. The beſt is denſe, of a brown Colour, hard to be broken, reſinous, and inflammable.

It was a Stranger to the *Greeks* and *Arabians*, being brought into *Europe* with the other Riches of *America*. It took its Name from *Xalapa*, a Town of *New-Spain*, from whence it was firſt imported to us.

Authors have hitherto been undetermined concerning the Plant to which it belongs; ſome ſuppoſing it to be the *Bryonia, Mechoacanna nigricans*, C. B. P. Some the *Solanum Mexicanum magno flore*, C. B. P. and others the *Convolvulus Americanus Jalapium dictus, Raii Hiſt.* The celebrated *Tournefort*, after Father *Plumier* and *Ligonius*, aſſerts that the Plant, whoſe Root is the officinal Jalap, is like the *Jalapa officinarum fructu rugoſo, Inſt.* R. H. which is a *Species* of the *Mirabilis Peruviana* or *Marvel of Peru*. [But this is a Miſtake; for Mr. *Houſton*, who brought the Jalap-Plant over with him from *America*, ſhewed it to M. *Bernard de Juſſieu*, reſiding at that Time in *London*, who diſcovered it to be a true *Species* of the *Convolvulus*.]

The Root of Jalap contains a large Quantity of alkaline Salt, with a ſmall Proportion of acid, joined with ſome Sulphur and Earth. Theſe Principles being mixed together conſtitute a Gum and a Reſin; whic are both obtainable in great Plenty from the dry Root. For twelves Ounces of Jalap

in

in Powder yielded three Ounces of Reſin, with four Ounces of a gummous Extract: and two Pounds of the Root in Diſtillation gave up nine Ounces of Oil, a very large Quantity of alkaline Phlegm, and a leſs Portion of acid Phlegm, wherein the Acidity diſcover'd itſelf only in an obſcure Manner: Furthermore, an Infuſion of Jalap in clear Water renders the Colour of blue Paper more lively.

This is an excellent cathartick Medicine and of very familiar uſe with the common People; who prefer it to other Medicine, becauſe it has no Smell, is agreeable enough to take, and anſwers their Expectations in a ſmall Doſe. It is ſaid to purge off all noxious Humours, but more eſpecially a redundant *Serum*, without Pain or Uneaſineſs. But *Simon Pauli* denies that it is ſo gentle as ſome would perſuade us, aſſerting it to be much of the ſame Nature with Scammony. *Wepfer* likewiſe aſſures us that it occaſions Inflammation in the Stomach and Inteſtines; which he endeavours to prove by the following Experiment. He gave to a Whelp a Month old half a Scruple of the Reſin of Jalap; and to another ſix Months old he gave a Scruple. This laſt was ſeized with a violent Hickup; and the other with Pains in the Belly, and a Staggering in his Gait as if he were drunk. Some Hours after, when neither of them had voided any Thing by Stool, he opened them alive, and found manifeſt Signs of Inflammation both in their Stomacks and Inteſtines. However, we muſt ingenuouſly confeſs that the Doſe of the Reſin was too ſtrong, it being a much more churliſh Medicine than the Root in Subſtance.

Hence, therefore, it does not follow that there is any Thing to be ſuſpected in Jalap, but what it has in common with other acrimonious and ſtrong Cathar-

Catharticks: for the Operation of all these depends, both upon the Action and Vellication of their sulphureous and acrid saline Parts upon the Membranes of the Intestines, whereby they strongly irritate the Glands to squeeze out their Contents; and also upon the Mixture of their Particles with the Mass of Blood, where they dissolve and melt down the Humours. Whence it appears, that a Medicine in order to purge must necessarily produce an Irritation of the Intestines, which will be greater or less in Proportion to the Strength or Dose of it.

This Drug then, among the stronger Hydragogues, may be considered as mild and gentle: Nor can it be otherwise hurtful than by Accident. *Caspar Bauhine* extends the Dose to ʒj. but *Simon Paulli*, *Caspar Hoffman*, and the best Physicians, confine it to gr. xxiv. And accordingly it is found, in Substance, to purge very well and without Uneasiness from gr. xij. to xxiv.

But in Relation to Jalap we must observe, that in acute Fevers it is very improper; as also in hot and dry Constitutions. For in these, like all other acrimonious and irritating Purgatives, it raises an intense, and oftentimes inflammatory Heat in the Bowels, and promotes a very sparing Evacuation; nay, frequently none. It is of Service chiefly to Persons of cold Temperaments, who abound with serous Humours and are of a moist Habit of Body; and is particularly efficacious in a Dropsy, *Anasarca*, and Cachexy. However, we must be very careful in distinguishing what is properly meant by a moist Habit; since Bodies which in Reality are dry, have oftentimes a Redundancy of *Serum*. Thus, in Persons subject to melancholick, scorbutick and atrabilious Affections, whose Bowels are over heated by the immoderate Incalescence of the Bile; or whose Blood, being rendered acrimonious by ex-

ceſſive Heat, has the fibrous Part cloſely compacted, whilſt the other is diſſolved into *Serum:* in theſe, I ſay, and in Perſons under the like Indiſpoſitions, the Body ſeems to be overſtocked with ſerous Humours; inſomuch that they ſpit often, and diſcover other Signs of a Superfluity of ſuch Humours. Yet theſe Temperaments are not to be accounted moiſt; but, on the contrary, the Fibres within are hot, dry, and rigid. For being vellicated and ſhrivelled up by the Acrimony of the Humours, they exert not their Oſcillations with ſufficient Force to carry on the due Circulation of the Fluids. Hence they ſtagnate in all Parts of the Body, and tranſuding through the Veſſels, produce Cachexies, œdematous Tumours, Leucophlegmacies, Dropſies, and other Affections, which never yield to Hydragogue Medicines of this Sort. By a moiſt Habit of Body we are then to underſtand, an Habit replete with ſoft, mucilaginous, chylous, or recrementitious Juices; in which the Moiſture is not owing to a diſſolving Salt, or a Stagnation of the Fluids, but to a Redundancy of nutritious Juices, to Crudity, or over Feeding. Infants may ſerve as Inſtances of this Temperament, who living upon Milk and Pap, with the like humecting Aliment, eaſily bear purging. Again, Gluttons, who having their Blood overcharged with Fat, Chyle, or Serum, ſupport the Operation of a Cathartick without Injury. For this Reaſon Jalap is very uſeful in the Diſeaſes of Infants; becauſe all its Acrimony is blunted by the ſoft, milky or chylous Quality of their Fluids: but, on the other Hand, the Blood of Adults, being bilious or too elaſtick, by a cathartick Medicine like this, is immediately thrown into Fermentation. Upon the ſame Account alſo Purges are more ſucceſsful in the acute Fevers

Fevers of Infants, and may likewiſe be ventured upon ſooner to them than to grown up People.

Many pretend to correct ſome noxious Quality which they imagine to be in Jalap, by mixing it ſometimes with alkaline Salts, as with Salt of Tartar, of Wormwood, or the like: Sometimes with Acids, as with Cream of Tartar, Juice of Lemons, and Spirit of Sulphur or Vitriol; by which its Parts are concentrated, and in a Manner fixed: and ſometimes with Oils, or Aromaticks, ſuch as Cinnamon, Cloves, Ginger, or Mace; whereby they propoſe to reſtore the nervous Fibres of the Stomach and Inteſtines, when they are weakened by the Action of the Purgative. But to me it ſeems altogether uſeleſs to give a Purge, and to invalidate at the ſame Time its Force; it appearing more reaſonable not to give it at all. Acids indeed effectually diminiſh and temper the Force of a Cathartick; but the ſame may be done by only leſſening its Doſe. As to Aromaticks and aromatick Oils, I look upon them to be very bad Correctors: For they produce a ſtronger Irritation in the Bowels than the Medicine itſelf, and render it ineffectual; ſince they frequently raiſe an Inflammation, and ſo hinder the Diſcharge of Humours. Alkaline Salts ſeem much fitter to correct reſinous Catharticks; becauſe by dividing their tenacious or reſinous Parts, they prevent their adhering to the Membranes of the Inteſtines, which otherwiſe they are apt to do. Nevertheleſs theſe Salts abate not their Acrimony, but, on the other Hand, increaſe it.

Therefore, to the End that a purgative Medicine may ſucceed well, let it be ſuited to the Diſeaſe and Temperament of the Patient, and be given neither in too ſmall nor too large a Doſe; and then it will require no Correction. Or, if it be neceſſary any

Way to qualify its Force, let it be diluted with a ſufficient Quantity of Liquor. And this may be underſtood of Purgatives in general. As to Jalap, it wants no Corrector, ſince its ſaline and ſulphureous Parts are extended by a ſufficient Quantity of Earth; inſomuch that no Preparation thereof is better than the Root in Powder. A Reſin is got from it with Spirit of Wine, and a gummous Extract with Water. However, the Reſin purges no more, but, on the contrary, ſometimes, leſs than the Root, and always occaſions Pains and Gripings of the Bowels. And again, the gummous Extract is very weak, and therefore operates but ſlowly.

The Powder of Jalap is ſometimes ordered to be drank with Liquors, but is more commonly given in a Bolus.

Take of Jalap in Powder ℈j. Infuſe it a Night in ℥vj. of white Wine. Let the Infuſion with the Powder ſhook up together be taken in the Morning.

Take of powdered Jalap gr. xxiv. of the Syrup of Peach-Bloſſoms q. ſ. to make a Bolus.

Take of the Powder of Jalap gr. xviij. the Duke of *Holſtein*'s Salt ʒſs. Conſerve of Orange-Flowers. q. ſ. to make a Bolus.

Take of Rhubarb powdered gr. xxiv. Jalap gr. xij. dulcified Sublimate gr. x. make them into a Bolus with q. ſ. of any proper Syrup.

ARTIC. XII. *Of* IPECACUANHA.

This excellent anti-dyſenterick Medicine was diſcovered in the *New World* about the Middle of the laſt Age, and deſcribed by *William Piſo* in his Hiſtory of the *Indies*; by whom, and alſo by *Markgrave*, it was brought from *Braſile* into *Europe*. How-

However, it remained in Obſcurity, and altogether unknown in *France*, till about the Year 1672. when M. *Legras*, a Phyſician who thrice had travelled over many Parts of *America*, brought it with him to *Paris*. But notwithſtanding, its Virtues being not ſufficiently known, it was ſtill neglected for a long Time. Till at length one *Garner*, a foreign Merchant, brought it again to *France*, and greatly extolling its Virtues, M. *Adrian Helvetius*, a Phyſician of the Faculty of *Rheims*, ventured to uſe it: and his Succeſs was ſo extraordinary, that *Lewis* XIV. purchaſed the Secret of him, and made it publick.

In regard of the Places from whence this Root is brought there are two Sorts, (*viz.*) the *Peruvian* and the *Braſilian*; but in reſpect of its Colour, three; which are the *gray*, the *brown*, and the *white*.

1. *Ipecacuanha cinerea*; *Ipecacuanha Peruviana*, *Off.* The gray or *Peruvian Ipecacuanha*, which is called by the *Spaniards Bexuguillo* and *Rais de Oro*, and is perhaps the *Ipecacuanha alba* of *Piſo*, is a tortuous Root, two or three Lines thick, and encompaſſed, as it were, with rough Rings or Circles, being of a light brown or aſhy Colour, denſe, hard, brittle, and reſinous, with a ſmall String running through the Middle, having a ſubacrid bitter Taſte, and a faint Smell. It grows about the Gold Mines in *Peru*, and is imported every Year by the *Spaniards* at *Cadiz*.

The Plant of which this Sort is the Root is not known, unleſs it be the *Ipecacuanha alba* of *Piſo*.

2. *Ipecacuanha fuſca*; *Ipecacuanha Braſiliana*, *et Radix Braſilienſis*, *Off.* The brown, or *Braſilian Ipecacuanha*, or *Braſile*-Root, which is produced from the *Ipecacuanha altera ſeu fuſca*, *Piſon. Ouragoga*, *Lin. gen.* 934, is tortuous and encompaſſed

with Rings like the former, but is rougher and alſo thinner, being but about a Line in Thickneſs, of a brown Colour or blackiſh on the outſide, and white within, having a gentle Bitterneſs in its Taſte. This is brought from *Braſile* to *Liſbon*.

3. *Ipecacuanha alba, ſeu potius Ipecacuanha adulterina.* White, or rather Baſtard-*Ipecacuanha* is a thin woody Root, without Wrinkles, void of Bitterneſs, and of a yellowiſh white Colour. Some aſſert this to be the *Ipecacuanha alba* of *Piſo*, which I queſtion very much; becauſe the Root which *Piſo* deſcribes under that Name, both vomits and purges; whereas this does neither. It therefore ſeems moſt likely, that the Merchants mix this with Ipecacuanha, rather through Avarice, than upon Account of any Affinity between the two Roots; for the *Ipecacuanha alba* of *Piſo* is probably the ſame with the *Ipecacuanha Peruviana*, or the *Bexuguillo* of the *Spaniards*, as we have before obſerved.

The gray and brown Ipecacuanha are emetick and cathartick. *Piſo* likewiſe commends their alexiterial Quality; and aſſerts, that their Virtues are not only extraordinary in Dyſenteries and inveterate Fluxes of the Belly, but in many Diſorders alſo ariſing from long and obſtinate Obſtructions. The *Peruvain* or gray Sort is preferred, as being much milder in its Operation. It is made Choice of well preſerved, full of Juice, and not too old. However, according to *Piſo*, when it is old it has ſome Efficacy remaining; for though it loſes its emetick Quality, yet it retains its ſudorifick and alexiterial Virtues for many Years. Both Sorts are much uſed at preſent in Fluxes of the Belly; but are chiefly ſucceſsful in curing a confirmed Dyſentery; for they frequently conquer the Diſeaſe in the Space of one Day, like a Charm.

They

They are so viscid and acrimonious, that a Person by reducing a Pound or two of either Sort into Powder, and not taking Care to avoid the finer Parts that are raised out of the Mortar, is effected in a short Time with a difficult Respiration, Bleeding at the Nose, spitting of Blood, Inflammation and Swelling of the Eyes, Face, or sometimes of the Throat, with the like Symptoms; which either of their own Accord, or by opening a Vein, disappear in a few Days. Further, being boiled in Water they give out a large Quantity of Mucilage, which is so thick and tenacious, that a strong Expression is required to strain it through Linen.

By Spirit of Wine, from eight Ounces of gray or *Peruvain* Ipecacuanha, were got ten Drachms of Resin. From the same Quantity of the Root, by common Water, were obtained three Ounces and a Half of a gummous Extract. The Powder remaining, after the Gum and Resin had been extracted from eight Ounces of the Root, weighed four Ounces.

From eight Ounces of brown or *Brasilian* Ipecacuanha were got six Drachms of Resin: and the same Quantity of the Root yielded one Ounce and three Drachms of Gum. The Powder remaining, after the Gum and Resin had been extracted from eight Ounces of the Root, weighed six Ounces.

Hence it appears that the Quantity of active Principles, that is, of Resin and Gum, is greater in the gray Sort than in the brown.

The resinous Extract is strongly emetick. The gummous Extract likewise vomits, though but very little; yet it sometimes cures Dysenteries, whilst the Resin, on the other Hand, does not. The Powder remaining after the Extraction of the Gum and Resin is altogether inert; since it neither vomits,

nor purges, nor cures Dyſenteries. Hence therefore we may conclude, that the principal Virtues of Ipecacuanha in curing this Diſeaſe, are owing to its Gum: For the Membranes of the Inteſtines, being deprived of their Mucus, are beſmeared with the mucilaginous Parts of the Medicine, and their Ulcerations are dried and healed. It is true, the Reſin alſo, by its emetick Quality, may be conducive in ſome Meaſure to the Removal of the Diſeaſe, by dividing and evacuating the morbifick Matter which lurks in the Glands of the Stomach and Inteſtines. However, it muſt be allowed that theſe Subſtances, as they are naturally combined in the Root, cure Dyſenteries with much greater Certainty, than in a ſeparate State.

Piſo propoſes ʒj. of the Root in Powder for a Doſe, and ʒij in Decoction or Infuſion. He ſays the Inhabitants of *Braſile* chuſe to make uſe of it diluted with Liquors, rather than in Subſtance; becauſe by letting it ſtand a Night in Maceration in the open Air, or by boiling it in Water, they are able to obtain a conſiderable Share of its Virtues; and afterwards the *Reſiduum* being again treated in the ſame Manner, the ſtrained Liquor is adminiſtred as the firſt, being now leſs cathartick and emetick, but more aſtringent. For we muſt obſerve that this Root not only makes a Revulſion of the viſcid morbifick Matter from the Part affected, and diſcharges it by Vomit, but by its Aſtringency alſo reſtores the Tone of the Bowels.

With us it is more commonly uſed in Subſtance, than in Decoction or Infuſion; being generally taken on an empty Stomach in the Morning from ʒſs. to ʒſs. in Wine, Broth, or Wafers. The firſt Doſe often cures a Dyſentery: if not, we muſt have a Recourſe to a ſecond; and ſo to a third. Some, for fear of a Relapſe, preſcribe a ſtomachick and

and anodyne Draught for the Patient to take the ſame Day in the Evening. Thus,

Take of Ipecacuanha in Powder ℈j. or ʒſs. Syrup of Quinces q. ſ. Make a Bolus and give it in the Morning in a Wafer, with a Draught of Broth, or Wine and Water after it.

Take of the Confection of Hyacinth ʒj. Syrup of white Poppies ʒvj. diſſolve them in ℥iij. of Plantain-Water, for a Draught to be taken when going to Bed. Or,

Take Diaphoretick Mineral, red Coral and ſealed Earth, ā gr. xv. Cinnamon and leſſer Galangal ā gr. x. Opium gr. ſs. Syrup of Quinces q. ſ. Mix and make a Bolus.

I have found by Experience, that ſix Grains of Ipecacuanha vomit very well, and that ten Grains operate as ſtrongly as one or two Scruples. Wherefore I think a larger Doſe than ſix or ten Grains entirely needleſs.

As it is obſerved that this Drug muſt be frequently repeated in order to prevent Relapſes, therefore, after the Patient has been ſufficiently purged both upwards and downwards by a conſiderable Quantity, I order a few Grains to be taken at ſeveral Times in the Day; that ſo, without occaſioning any Evacuation, it may act as an Aſtringent; and by ſpreading the Coats of the Inteſtines over with its Mucilage, may deterge and dry up the Ulcers. By this Method the Patient is freed both from the Diſeaſe and the Danger of a Relapſe.

Therefore, when a Perſon labours under a ſimple Dyſentery, let him be duly prepared, firſt by Bleeding if there be a Plethory or Fever; and afterwards by proper Clyſters and a ſuitable Diet. Then let

let an Evacuation be made by the following or the like Forms of Medicines.

Take of *Calabrian* Manna ℥j. diſſolve it in ℥vj. of Plantain-Water. To the ſtrained Liquor add of the univerſal Electuary with a double Quantity of Rhubarb ʒſs. of the Powder of Ipecacuanha gr. vj. Make a Draught to be taken in the Morning. Or,

Take of Rhubarb powdered ʒj. Jalap gr. xij. Braſile-Root g. vj. Syrup of Succory with Rhubarb q. ſ. Make a Bolus.

When the firſt Paſſages by theſe Medicines have been well evacuated both by Vomit and Stool, give the following aſtringent and ſtrengthening Electuary.

Take Conſerve of red Roſes and Hips ā ℥j. Venice-Treacle ʒij. Powder of Ipecacuanha gr. xviij. Syrup of Quinces q. ſ. Mix and make an Electuary. The Doſe is ʒj. in the Morning faſting, and the ſame four Hours after Dinner, till the Diſeaſe is perfectly cured.

The great *Tournefort* has obſerved, that this Specifick is leſs ſucceſsful in Camps than in private Families; either becauſe the Strength of the Soldiers is generally exhauſted by Toil and Hardſhip, and their Bowels are too much injured; or becauſe the Air which they breathe is unwholſome and full of noxious Vapours. And what he has aſſerted in regard to Soldiers, I have alſo experienced amongſt the Poor; eſpecially when the Dyſentery has been epidemical, and owing to ſome malignant Exhalation, which either the Aliment or the Air have introduced into the Maſs of Blood.

For

For when the Diſeaſe is of this Nature, it is to no Purpoſe to give *Ipecacuanha*, unleſs the Uſe of it be continued for ſome Time, with the Aſſiſtance of cordial and alexipharmack Medicines. For Inſtance, in an epidemical and malignant Dyſentery,

Take of the univerſal Electuary with a double Quantity of Rhubarb ʒiij. Powder of Ipecacuanha gr. x. Make a Bolus.

In Caſe of great Weakneſs, it will be proper to order the following cordinal and anti-dyſenterick Mixture immediately after the Evacuation.

Take the Confection of Hyacinth and Diaſcordium ā ʒj. Powder of Ipecacuanha gr. x. Syrup of Quinces ℥j. Cinnamon-Water ℥ſs. Plantain and Baum-Water ā ℥iij. Mix and let a Spoonful be taken every Hour.

The Day following,

Take of Diaſcordium ʒj. *Braſile*-Root gr. j. Make a Bolus, to be repeated Morning and Evening till the Patient is quite recovered.

Although the Virtues of this Root render it a Specifick in the Dyſentery, yet its Efficacy is not ſo certain againſt other Fluxes of the Belly; and it is even more ſucceſsful in a confirmed Dyſentery, than during the firſt Stage of it. For in the Beginning, the Heat of the Blood is too immoderate, and the morbid Ferment too impetuous and unruly for the Medicine to take Effect: But when the Diſeaſe is confirmed, or in its Decline, the morbifick Matter, which is then ſeparated from the Blood,

Blood, harbouring chiefly in the Inteſtines, is more eaſily evacuated.

In fine, this Remedy, if it be duly adminiſtred, very ſeldom fails. That it ſometimes anſwers not our Expectation is generally owing either to ſome incurable Affection of the Bowels, or a total Depravation of the Humours. However, though it has not the deſired Succeſs, yet the Patient is not worſe for uſing it; for which reaſon, it may be deſervedly called the ſafeſt and the beſt of Medicines *.

ARTIC. XIII. *Of* FLORENTINE ORRIS.

Iris Florentina, Off. Ἰρὶς Ἰλλυρικὴ, *Dioſc. et Græcor. Aſmeni iuni ſive Aierſa Arab.* The Root of *Florentine Orris* comes to us in oblong tuberous Pieces, ſomewhat flat and as thick as one's Thumb, or ſometimes twice as thick, having its Bark, which is of a reddiſh yellow Colour, pared off with its Fibres, and then it appears white and ſpotted. It has a fragrant Smell, ſomething like a Violet, and a bitter acrid Taſte. It ought to be made Choice of well preſerved, white, fragrant, and free from Wrinkles.

The Plant is called *Iris alba Florentina*, C. B. P. White *Florentine* Orris, or Flower-de-luce of *Florence*. *Iris Flore alba*, J. B.

Both the Ancients and Moderns have attributed many Virtues to this Root. Being given from ℈j. to ʒj. it attenuates and incides inſpiſſated Lymph in the Lungs, and ſo helps Expectoration: Whence it is uſeful in *Aſthmas*, Difficulty of Breathing, and

* This Root is very rarely made uſe of in *France*, except in the Caſes above mentioned; for in others *emetick Tartar* is preferred. But in *England* it is given not only in Dyſenteries and *Diarrhœas*, but likewiſe in Fevers, and almoſt all other Diſtempers that require Vomiting.

Coughs.

Coughs. It is likewiſe ſerviceable to Children in the Gripes; and externally applied is reckoned ſarcotick. Moreover, it is mixed with other Ingredients in the Intention of a Sternutatory, Errhine, or Apophlegmatiſm. *C. Hoffman* ſays it cauſes Sleep; though not by Virtue of a narcotick Quality, but by a certain vaporous Subſtance, of the ſame Nature with that which compoſes Saffron, Myrrh, Nutmegs, *&c.* But he tells us, that it has this Effect only in Perſons who are of cold and moiſt Temperaments.

Take the Root of *Florentine* Orris, Liquorice, Aniſeed, native Sulphur, q. v. Syrup of white Horebound q. ſ. Make an Electuary. The Doſe is ʒj. ſeveral Times a Day for an *Aſthma* or Cough.

Take *Florentine* Orris and male Piony ā ʒij. Saffron ʒiij. Fennel ʒij. Sugar-candy ℥iij. Make a fine Powder, of which give ℈j. or ℈ij. to Children, in the Mother's or Cow's Milk, or in Pap, to appeaſe the Gripes and diſcuſs Wind in the Bowels.

Take of *Florentine* Orris ʒiij. Leaves of Betony and Marjoram ā ʒj. Mix them for a ſneezing Powder.

Take of *Florentine* Orris ʒij. the Seed of Muſtard and Staves-aker ā ʒſs. Being groſsly bruiſed and tied in a Nobule, let them be held in the Mouth and chewed for half an Hour faſting, holding down the Head to diſcharge the Spittle.

ARTIC. XIV. *Of* PELLITORY *of* SPAIN.

Pyrethrum, Off. Of this there are two Sorts. The one is about as long and thick as one's Finger,

of a dark yellowiſh Colour on the outſide and whitiſh within, having ſome Fibres growing to it, and an extremely acrid and burning Taſte, but void of Smell. It is brought from *Tunis*, *Spain*, *Italy*, and other warm Climates. The other Sort is thinner and leſs acrid.

The Plant which produces the firſt is called *Chamæmelum ſpecioſo flore*, *radice longâ*, *fervidâ*, *Shaw Catal.* No. 138. p. 39. *Pyrethrum vulgò et veteribus Arabibus*, *Guntuſs. ejuſd. Buphthalmum creticum*, *Cotulæ facie*, *flore luteo et albo*, *Breyn. Cent.* 1. p. 150. Tom. 75. *Buphthalmum caulibus ſimpliciſſimis*, *unifloris*, *foliis pinnato multifidis*, *Lin. H. Cliff.* p. 414.

The latter is the Root of the *Leucanthemum Canarienſe*, *foliis Chryſanthæmi*, *Pyrethri ſapore*, *Inſt.* R. H. *Chryſanthæmum fruticoſum*, *foliis linearibus*, *dentato trifidis*, *Lin. H. Cliff.* 417. *Chamæmelum Canarienſe ceratophyllum fruticoſius glauco folio craſſiore*, *ſapore fervido*, *Magala ab Incolis nominatum*, *Mor. Hiſt. Oxon. Part.* 3. p. 35.

Pellitory being held in the Mouth opens the ſalival Ducts and draws forth abundance of Spittle; which renders it a Specifick in the Tooth-ache, particularly when the Pain proceeds from Obſtructions or a Catarrh. By its Acrimony and Pungency it alſo vellicates the Nerves, and reſolves their Obſtructions, and is therefore very uſeful to be held in the Mouth and chewed in ſleepy Diſeaſes, or Palſy of the Tongue.

Take of the Root of Pellitory q. v. ſteep it in Vinegar all Night, and let it be chewed in the Morning.

Take the Root of Pellitory and Ginger ā ʒj. black Pepper ʒſs. Reduce them to Powder and make a Nodule to be held betwixt the

Teeth; or let them be made up with Wax into Balls of the Size of an Hasel-nut, and be used as a Masticatory.

It is seldom given inwardly, except by Way of Clyster in Apoplexies and other sleepy Affections.

Take of Pellitory Root ʒj. boil it in ℔j. of the common Decoction for Clysters; and in the strained Liquor dissolve ʒfs. of *Sal Gem* for a Clyster.

ARTIC. XV. *Of* RHUBARB.

Some Botanists confound the Rhubard of the Moderns with the Rhapontick of the Ancient *Greeks*; but from the Description of Rhapontick given by *Dioscorides* under the Name of Ῥᾶ or Ῥῆον, their Difference is evident; this appearing to have been the same with the Rhapontick of *Prosper Alpinus*.

Rhabarbarum, *Off. Rhabarbarum verum*, *seu Sinense*. The officinal or true *China*-Rhubard is brought to us in thick Pieces of unequal Magnitudes, being sometimes four, five, or six Inches long, and three or four Inches thick, of a yellow or browniſh Colour on the outside, but marbled, or variegated like a Nutmeg within with Saffron-Colour and yellow, and of a light, fungous Texture. The Taste is subacrid, bitterish, and a little astringent; and its Smell is aromatick, though somewhat unpleasant. When it is used in Physick it ought to be fresh, sound, and of a good Colour, giving a Tincture to aqueous *Menstruums* like Saffron, and leaving no Slimeness upon the Tongue. It comes to us from the *East-Indies*, *Turkey*, and *Muscovy*.

[Of what *Species* the Plant is which produces Rhubarb is not very eaſy to determine; no Author having yet given any certain Account of it. *Muntingius* indeed has publiſhed a Figure and Deſcription thereof, taken from *Matthiolus*, under the Name of *Rhabarbarum lanuginoſum, ſive Lapathum Chinenſe longifolium:* But it is plain neither he nor *Matthiolus* had ever ſeen it; becauſe no Plant hitherto known correſponds to their Deſcription. It is very likely, therefore, that both the Deſcription and Figure were formed meerly from the Relations of Merchants who brought the Root from *China*.

However not long ſince, M. *Anthony* and M. *Bernard de Juſſieu*, Profeſſors of Botany in the Royal Garden at *Paris*, had a Plant ſent to them from *Muſcovy*, called *Rhabarbarum folio oblongo, criſpo, undulato, flabellis Sparſis*, which is the ſame that had been ſent before from that Country to Mr. *Rand*, Director of the Phyſick-Garden at *Chelſea*, for true *China* Rhubarb, under the Name of *Lapathum Bardanæ folio, undulato, glabro.* And this undoubtedly is the true *China*-Rhubarb; not only as it was ſent for ſuch, but becauſe its Seeds agree with thoſe of the true Rhubarb which were tranſmitted from *China* to M. *Vandermonde*, Phyſician of the Faculty of *Paris*. The Root, moreover, has exactly the Figure and Appearance of Rhubarb, and its Colour, Smell, and Taſte alſo are the ſame. This Plant is now cultivated in the Royal Garden at *Paris*, where it flouriſhes and bears the coldeſt Winters.]

Rhubarb contains a large Quantity of Sulphur and fixt Salt, joined with a little acid Salt and a large Stock of Earth. From theſe Principles mixed together ariſes a gummous Compound, whereof the Gum and Earth are eaſily ſeparated, and in no ſmall

ſmall Quantity: For from two Ounces of Rhubarb, by common Water, were got one Ounce and twelve Grains of a gummous Extract. The Proportion of Reſin is very ſmall, and That divided by a great deal of alkaline Salt; inſomuch that three Drachms of a ſalino-reſinous Extract is as much as can well be obtained from two Ounces of the Root. Moreover, this Extract, by reaſon of the large Portion of Salt, eaſily diſſolves in common Water: And on the ſame Account, the Tincture of Rhubarb made with Spirit of Wine does not turn milky in Water like other reſinous Tinctures.

All Phyſicians allow two different Qualities in Rhubarb; the one purgative, the other gently reſtringent. It is eſpecially reckoned an excellent Cholagogue; and ſome, by Reaſon of its Efficacy in reſolving Obſtructions of the Liver, have dignified it with the Titles of *Anima*, *Vita*, and *Theriaca Hepatis*. It is ſerviceable in the Jaundice, Looſeneſſes, Gonorrhœas, and the *Fluor albus*; and alſo kills Worms. It is ſometimes given with an Intention to evacuate Bile, and ſometimes as an Alterative; and is certainly an excellent Medicine, being accounted ſafe not only to Children, Adults, and old People, but likewiſe to Women during their Pregnancy and Lying-in.

But notwithſtanding ſo many Encomiums, we muſt not ſuppoſe it entirely free from Inconveniences; for it leaves the Inteſtines dry, and is ſometimes offenſive to the Kidneys, Bladder, and Brain; and is therefore improper when the Bowels or the Blood are over heated, or the Humours in a ſtrong febrile Effervescence. It is of great Service in the Jaundice, when a Viſcidity or Inſpiſſation of the Bile, obſtructing the ſecretory Ducts of the Liver, is the Cauſe of the Diſeaſe: But when it proceeds,

on the contrary, from a too exalted, volatile, and incalescent State of the Bile, diffusing itself entirely over the whole Habit, Experience teaches us that Rhubarb is prejudicial, or at least that it does no good. *Fallopius* blames it, as being hurtful in Affections of the Kidneys and Bladder; in which Parts it occasions Heat. And *Simon Paulli* observes a long and frequent Use of it to have brought on a *Vertigo* or Giddiness. Hence then we may conclude, that Rhubarb ought not to be used without Caution.

It is prescribed in Substance, sometimes to be chewed and swallowed before Meals, to help Concoction, to strengthen the Tone of the Stomach, Intestines, and other Parts, and to remove Obstructions of the Liver, Spleen, and Mesentery. In Cachexies of Children it is ordered in Infusion, to destroy Worms and carry off the verminous Matter. The Dose in Substance is from ℈ss. to ʒj. and in Infusion to ʒij. Some order it to be toasted, with a Design of lessening its purgative Quality, and increasing its Astringency: But in my Opinion such Management is needless; because we are furnished with a sufficient Number of astringent Medicines, which may either be mixed with it, or given when it has done purging.

An Extract is usually prepared from it in the Shops, thus.

Take of Rhubarb bruised and cut small ℔j. pour upon it ℔iv. of Succory-Water. Let them stand together in Maceration in a gentle Heat for twelve Hours, and then strain the Infusion through Linen. Upon the remaining Mass pour ℔j. of Spirit of Wine, and macerate for six Hours more. Afterwards evaporate the Tincture, decanted clear and mixed with the Infusion,

Infuſion, to the Conſiſtence of an Extract, which may be given from ℈ſs. to ʒj. in the Form of a Bolus or Pills.

But it is to be obſerved, that Rhubarb purges much better in Subſtance, than either in Decoction, Infuſion, or Extract, though given in a double Quantity.

Take Rhubarb and ſoluble Tartar ā ʒj. Infuſe them a Night in ℥vj. of Succory-Water. In the Infuſion diſſolve ℥iſs. of *Calabrian* Manna, and give the ſtrained Liquor to purge off the Bile.

Take of the Pulp of Caſſia freſh drawn ʒvj. Rhubarb and vitriolated Tartar ā ʒſs. Mix and make a Bolus, which may be divided into three or four Parts, and ſo taken.

Take of Rhubarb powdered gr. xxiv. Jalap gr. xij. Ipecacuanha gr. x. Syrup of Succory with Rhubarb q. ſ. Make a purging Bolus for a Dyſentery.

Take of Rhubarb gr. xxiv. Jalap gr. xij. dulcified Sublimate gr. x. lenitive Electuary ʒj. Syrup of Succory with Rhubarb q. ſ. Make a purging Bolus.

Take of Rhubarb bruiſed and cut ſmall ℈iv. Infuſe it in ℔ij. of Spring Water; then infuſe in ℥vj. of ſtrong white Wine, ℥j. of the Filings of Iron, and macerate for ſix Hours. Afterwards ſtrain the two Infuſions and mix them. The Doſe is four or five Spoonfuls a Day when the Stomach is moſt empty. This is proper to open Obſtructions of the Liver and Spleen, or to cure the *fluor albus*, the Patient having been duly prepared.

Take of Rhubarb in Powder ʒiij. the mercurial *Panacea* ʒj. Balſam of Capivi ʒiſs. Mix them into an Electuary, and give ʒj. Morning and Evening in a Gonorrhœa, the Patient being purged every third or fourth Day with mercurial Pills.

ARTIC. XVI. *Of* SARSAPARIL.

Sarſa-parilla, et Salſa-parilla, Off. Under this Name in the Shops we meet with Roots or rather *Flagella* or long Switches, of the Thickneſs of a large Ruſh or Gooſe-Quill, tough, flexible, and marked with Furrows quite along, with a thin Bark of a brown or aſhy Colour, under which is a white farinaceous Subſtance, coarſe, ſoft, and eaſy to be rubbed to Powder by the Fingers, being almoſt like Agaric, in Taſte ſomewhat glutinous and bitteriſh, though not unpleaſant; and a woody, ſmooth Pith, or tough String, runs through the Middle. A great Number of theſe Switches or Twigs deſcend from one Head or a ſquammous Root as thick as one's Thumb. It comes from *New Spain*, *Peru*, and *Braſile*. The beſt Twigs are full, pithy, denſe, ſound, of a white Colour within, and about as thick as a Gooſe-Quill, and like Twigs of Willow are eaſily pulled aſunder into Shreads through their whole Length. When their Colour appears blackiſh, or they are rotten, ſo as to let fall much Duſt or mealy Powder in Splitting, or when they are too thick, ſuch as are brought from that Part of *Braſile* which is called *Maranhaon*, they are not fit to be uſed in Phyſick.

The Roots of diverſe Plants are imported from *America* under the Name of Sarſaparil, bearing all a Reſemblance or Affinity to the *Smilax aſpera*. Of theſe *Hernandez* mentions four *Species* which grow in

in *Mexico* and *New Spain* (viz.) *Mecapatli ſeu Zarſaparilla prima. Quauhmetatl ſeu Zarſa-parilla ſecunda, et tertia*; and *Quauhmecapatli altera ſeu Zarſa quarta.*

From four Pounds and a Half of Sarſaparil, diſtilled in a Retort, were obtained two Ounces of inſipid Phlegm; eight Ounces of ſubacid Phlegm; fifteen Ounces of acid Spirit; fourteen Ounces of Spirit impregnated both with urinous and acid Salt; and ſix Ounces of thick Oil. There remained in the Retort twenty-three Ounces of *Caput mortuum.* This being perfectly calcined weighed five Ounces, ſeven Drachms and a Half; from which were extracted one Ounce, two Drachms and twenty-ſix Grains of fixt Salt. Whence it appears, that the Effects of this Root are owing to an eſſential acid Salt, enveloped with a thick Oil and a large Quantity of Earth.

This Drug was quite a Stranger both to the *Greeks* and *Arabians*, being firſt brought into *Europe* by the *Spaniards* from *Peru.*

It provokes Sweat, and divides and attenuates viſcid and tenacious Humours. In the Pox, Gout, catarrhous Affections and the Palſy, it is reckoned a Specifick; as alſo in chronical and inveterate Diſtempers which proceed from thick and viſcid Humours; for reſolving obſtinate preternatural Tumours; and againſt Ulcers, Tetters, and all other Diſeaſes of the Skin.

When it was much in Vogue for the venereal Diſeaſe, the Method of giving it was this. Four Ounces were macerated for twenty-four Hours in twelve Pints of Water, which was afterwards boiled away to half. The Decoction was then ſtrained through Linen and kept for Uſe. Of this the Patient, after a due Preparation, drank eight Ounces warm Morning and Evening, eating no-

thing for four Hours after, and lying in Bed well covered with Clothes to ſweat. Sometimes a little of the Root in Powder was mixed with each Glaſsful of the Decoction. And thus it was continued for thirty, and in ſtubborn Caſes, for forty Days, with a Purge every tenth Day, and a very ſparing Diet; nothing being allowed but Biſcuit and Raiſins. By this Method the *Spaniards*, and Inhabitants of the ſouthern Parts of *America*, were wont to cure the venereal Diſeaſe; but in our Climate, which is much colder, it has been attended with no great Succeſs. This may be attributed to two Cauſes: As firſt, to the Denſity of the Skin in People of theſe Climates, they being on that Account leſs diſpoſed to ſweat; and ſecondly, to an improper Diet, the Patients here not obſerving ſo exact and low a *Regimen* as both the Remedy and the Diſeaſe require. For, if we may credit *Monardus*, the *Indians* are ſo very ſtrict in this Point, that they ſtarve and emaciate ſuch as labour under a venereal Infection to the laſt Extremity, allowing them nothing to eat or drink for three Days, except a warm viſcid Liquor which they obtain by Decoction from Sarſaparil.

This Root is ſuppoſed to conſiſt of finer Parts than either *China* or *Guaiacum*, and therefore to be more ſudorifick. It is given from ʒſs. to ʒij. in Subſtance, and to ℥ſs. in Decoction. *Monardus* cautions us to abſtain from it in Fevers and acute Diſtempers. It is made uſe of chiefly in drying and ſweating Ptiſans and Apozems.

Take of Sarſaparil cut ſmall ℥iij. Guaiacum ʒij. boil them in ℔x. of Spring-Water to a Conſumption of Half; then ſtrain the Decoction, and give a Glaſsful now and then.

Take

Take of Sarſaparil ʒij. put them into the Belly of a drawn Pullet, and boil them in ℔vj. of common Water to ℔iv. for four alterative Broths, to be taken one every fourth Hour in the Rheumatiſm.

Take Sarſaparil and China ā ʒij. of the Bark and Wood of Guaiacum together ℥j. Saſſafras ʒſs. Quickſilver confined in a Nodule ℔ſs. boil them in ℔vj. of Water to ℔iv. and make an Apozem for the venereal Diſeaſe, Catarrhs and the Palſy.

Take Sarſaparil, the Tops of leſſer Centory, and the Roots of round Birthwort ā ʒiſs. the Leaves of Germander and Ground-Pine, and the Seed of St. *John*'s Wort ā ʒij. the Root of Angelica ʒſs. Cinnamon ʒſs. Saffron ℈j. Cloves ℈ſs. Let them all be powdered and mixed with Honey q. ſ. The Doſe is ʒiſs. every Morning on an empty Stomach for a whole Year, in arthritick Diſorders or the Rheumatiſm from a cold Cauſe.

ARTIC. XVII. *Of* SNAKE-ROOT.

Serpentaria Virginiana; *Colubrina Virginiana*, *Off. Radix Snagroël novæ Angliæ*, *Cornut.* This is a thin, light and fibrous Root, of a brown Colour without and yellowiſh within, having a fragrant aromatick Smell ſomething like Zedoary, and a ſubacrid, bitteriſh Taſte. It is brought from *Virginia*, and ought to be made Choice of freſh, aromatick, and free from the Mixture of other Roots.

Plukenett, in his Phytography, mentions three Plants, whoſe Roots are brought from *Virginia* for Snake-Root. The firſt is called *Ariſtolochia polyrrhizos auriculatis foliis*, *Virginiana*, which is the *Serpentaria altera*, *Virginiana vulgò*. *Raii* Hiſt.

T. 3. p. 393. The ſecond, *Ariſtolochia Violæ fruticoſæ foliis, Virginiana, cujus radix Serpentaria dicitur.* And the third, which is a true *Species* of Snake-Root, is diſtinguiſhed *Ariſtolochia, Piſtolochia caule nodoſo, ſeu Serpentaria Virginiana D. Baniſter, Pluk. Phyt.*

Snake-Root, in a chymical Treatment, gives up a large Quantity of acid Spirit, with both a thick and thin Oil; a moderate Quantity of *Caput mortuum* remaining in the Retort, full of fixt alkaline Salt. Moreover, from the Root, either by Water, or by Spirit of Wine, may be drawn a ſalino-reſinous Extract, though not a pure Reſin. Hence we may conclude that its Virtues are owing to an acid Spirit, an Oil, and a fixt alkaline Salt, mixed together.

It is accounted diuretick, diaphoretick, and alexipharmack. It reſiſts Poiſons and Putrefaction, and is extolled as a certain and ſpeedy Remedy for the deadly Bite of the Rattle-Snake, being therefore called Snake-Root. They who have been bit immediately fall to chewing this Plant, and ſwallow the Spittle, applying at the ſame Time ſome of the Leaves bruiſed to the Wound. It is reported alſo to cure the Bite of a mad Dog, and to prevent an *Hydrophobia.* It deſtroys Worms and the verminous Putrefaction; and has likewiſe a febrifugous and anti-hyſterical Virtue aſcribed to it. In Powder it is ordered from gr. x. to ʒſs. and in Infuſion to ʒij.

Take of Snake-Root gr. xij. Crabs Claws p. p. ʒj. Syrup of Clove-July-Flowers q. ſ. Make a Bolus to provoke Sweat and remove Putrefaction in malignant Fevers. Or,

Take Snake-Root powdered gr. xx. *Venice*-Treacle ʒſs. or q. ſ. to make a Bolus.

Take

Take Snake-Root cut ſmall and bruiſed ʒvj. Boil in ℥xij. of Spring-Water to Half; adding towards the End gr. xij. of Cochineal. In the ſtrained Liquor diſſolve ℥j. of Honey, and add to the Solution when it is cold ʒſs. of Treacle-Water. Let two or three Spoonfuls be given every third Hour to promote a *Diaphoreſis* or Sweat in malignant or putrid Fevers, or to prevent a Coagulation of the Blood from cold Poiſons, and to expel the deleterious Particles.

Take Snake-Root, Contrayerva, and Viper's Fleſh powdered ā ʒſs. Mix. This Powder is commended in malignant Fevers, againſt cold Poiſons, and in intermitting Fevers to be given in the Beginning of the Paroxyſm.

ARTIC. XVIII. *Of* SPIKENARD.

Dioſcorides and other Writers mention ſeveral *Species* of this Plant, but no more than two are to be met with in the Shops at this Time, *viz.* the *Indian* and the *Celtic.*

1. *Nardus Indica*; *Spica*, *Spica Nardi*, *et Spica Indica*, *Off.* Ἰνδικὴ Νάρδος, *Dioſc. Alſembel Sembelen*, *Alſembel Alcib*, *Alnardin alhendi*, *Arab. Indian Nard*, or *Spikenard*, is a capillaceous Root, or rather a *Congeries* of ſlender Strings or convoluted Fibres growing upon the Top of the Root, being nothing but the nervous Filaments of withered Leaves cloſely matted together into a Tuft, which is called a Spike, perhaps, from its Figure. It is as long and thick as one's Finger, of a ferruginous or reddiſh brown Colour, a bitter, acrid, aromatick Taſte, and pleaſant Smell ſomething like *Cyperus*. For Uſe it ought to be choſen freſh and light, with a long Tuft, and the true Smell and Taſte.

The

The Plant is called *Gramen Cyperoides, aromaticum, Indicum, Breyn.* 2. *Prodrom.* It grows in *Java* in great Plenty, where it is much uſed by the Natives in the Kitchen to ſeaſon Victuals.

From the Taſte and Smell of *Indian* Nard we may conjecture that its Virtues are owing to a volatile oily Salt, enveloped with a large Quantity of fixt Salt and Earth.

It is alexiterial, cephalick, ſtomachick, and nephritick, and good in malignant Diſtempers It ſtops Catarrhs falling from the Head upon the Breaſt or Stomach. It alſo ſtrengthens the Stomach and helps Digeſtion, whether taken inwardly or outwardly applied. It brings all cold Diſeaſes to Concoction, provokes the *Menſes* and Urine, and is of Service for reſolving Obſtructions of the Liver, Spleen, and Meſentery. *Galen* cured the Emperor *Marcus* of a Weakneſs of his Stomach, and bad Digeſtion, by applying the *Unguentum nardinum* Plaiſter-wiſe to the Part upon Wool. *Bontius* tells us, that dry Spikenard infuſed in Vinegar and Sugar is taken by the *Indians* in Obſtructions of the Liver, Spleen, and Meſentery, which are very common Diſorders in thoſe Climates; as alſo againſt the Bites and Stings of Serpents and other poiſonous Animals, being in theſe Caſes either put upon the Wound, or given inwardly. In an Hæmorrhage of the Noſe *Riverius* commends it as an excellent and approved Remedy, being reduced to a fine Powder and taken in Broth, Plantain-Water, or any other ſuitable Liquor. The Doſe is from ʒſs. to ʒij. in Subſtance, and to ℈ſs. in Infuſion.

The Ancients prepared of it Collyriums and Unguents. The *Unguentum nardinum*, according to *Dioſcorides*, was made of *Schænanth*, *Coſtus*, *Amomum*, *Spikenard*, *Myrrh*, *Balm of Gilead*, and the *Oleum Balaninum* or *Omphacinum*. To theſe was ſometimes added the *Indian Leaf*.

2. *Nardus*

2. *Nardus Celtica*; *Spica Celtica*, *Spica Gallica*, *Spica Romana*, *Off.* Νάρδος κελτικὴ *et* ἀλιάγγια, *Dioſc. Saliunca*, *Plin. Alnardin Alſimbel Alkeliti aut Alkelt*, *Alſimbel alrumi*, *Arab.* *Celtic* Nard or *French* Spikenard is a fibrous, capillaceous Root, of a reddiſh Colour, with Leaves or ſmall *Squammæ* of a yellowiſh green Colour, of an acrid, bitteriſh, aromatick Taſte, and a ſtrong, fragrant Smell. For Uſe it ought to be freſh, of a good Scent, with a great Number of fibrous Roots, full, and not brittle. It had the Name of *Celtic* Nard, becauſe it was formerly got upon the Mountains in that Part of *France* which was called *Gallia Celtica.* But at this Time it is alſo found upon the *Stirian* Alps, and upon the Hills of *Liguria.*

The Plant to which it belongs is the *Valeriana Celtica*, *Inſt.* R. H. *Nardus Celtica Dioſcoridis*, C. B. P. *Nardus Alpina*, *Clus.* The whole Plant has an aromatick Scent, much like the *Valeriana Sylveſtris.* *Cluſius* tells us it flowers in the Month of *Auguſt*, when the *Alps* are almoſt covered with Snow.

Celtic Nard has the ſame Virtues with the *Indian*; but is reckoned more efficacious for provoking Urine, ſtrengthening the Stomach, and diſcuſſing Flatulencies.

ARTIC. XIX. *Of* ZEDOARY.

We find no Mention of Zedoary either in *Dioſcorides* or *Galen.* The *Arabians* uſed it in Medicines, and ſome of them, as *Serapio* and *Razes*, confound it with Zerumbeth, which is the Root of the *Zingiber latifolium ſylveſtre* of *Herman:* And though *Avicenna*, who had better informed himſelf, makes Zerumbeth a different Root, allowing beſides two *Species* of Zedoary; yet the Deſcriptions which

which he, and the reſt of the *Arabian* Writers, have given both of theſe and ſeveral other Drugs, are ſo ſhort and ambiguous, that it is very difficult to draw any probable Concluſions from them. Wherefore, leaving theſe Uncertainties, we ſhall proceed to give an Account of the Zedoary which is now uſed in Medicines.

In the Shops we meet with two Sorts of Zedoary (*viz.*) the *long* and the *round*; which ſome Authors ſuppoſe to be only different Parts of the ſame Root.

1. *Zedoaria longa*, *Off.* Long Zedoary is a tuberous, denſe, ſolid Root, two, three or four Inches long, as thick as one's Finger, and ending at each Extremity in an obtuſe Point, of a cineritious Colour on the outſide and white within, having an acrid, aromatick, bitteriſh Taſte, and a ſubtile fragrant Smell, emitting an exquiſite Fragrancy, ſomething like Camphore, when it is bruiſed or maſticated. The beſt is large, denſe, full, without Wrinkles, of a Subſtance, as it were, fattiſh or clammy, but ſo hard as to make ſome Reſiſtance to the Teeth, of a very fragrant Scent, and free from Holes.

2. *Zedoaria rotunda*, *Off.* Round Zedoary agrees exactly with the former in Subſtance, Weight, Solidity, Taſte, and Smell; differing from it only in Figure, which is bulbous or globular, about an Inch thick, and a little uneven on its Surface from the Remains of Fibres which have been pared off, ſometimes terminating in a ſhort Point, from which, whilſt it continues in the Ground, it uſually puts forth a Germ or ſmall Shoot.

Both Sorts, according to *Garcias ab Horto* and *Herman*, are brought from *China*; but in the Shops round Zedoary is the more common.

We

We are not altogether certain of the Plant to which Zedoary belongs. *Dale*, after *Breyn* and *Ray*, ſuppoſes it to be the *Malan-Kua*, *H. Malab.* p. 11. 17. *Bon-Tſiappo Braman : Colchicum Zeylanicum flore Violæ, odore et Colore Ephemeri Herman. Parad. Bat. prod.* 304.

Another *Species* of Zedoary is mentioned by *Herman*, in his *Catalogus Horti Lugduno-Batavi*, under the Name of *Zedoaria Zeylanica Camphoram redolens*, which the Inhabitants of *Ceylon* call *Harankaka.*

Zedoary being diſtilled with common Water yields a denſe and thick eſſential Oil, which concretes into the Form of a fine Camphore. It therefore abounds with a ſubtile eſſential Oil united with a very volatile acid Salt; from whoſe Combination ariſes this fine camphorous Reſin; which is enveloped in a large Quantity of Earth, and to which the Virtues of the Root are owing.

It is alexipharmack, reſiſting Poiſons, the Bites of venomous Animals, and the Plague. It effectually provokes Sweat, and powerfully incides the thick tenacious Phlegm which ſtuffs up the Lungs in an Aſthma and difficult Reſpiration, and promotes its Diſcharge. It divides and reſolves viſcid Serum ſtagnating in the Stomach and Inteſtines; diſcuſſes Wind, and relieves colick Pains thence ariſing. It ſtrengthens the Stomach, helps Concoction, and ſtops Vomiting and Looſeneſſes, by corroborating the relaxed Fibres, and increaſing their Oſcillations. When the Blood is become, as it were, vapid, and deſtitute of its Spirits, whereby the vital Fermentation is preſerved, it invigorates the whole Maſs, ſupplying it with a freſh Stock of ſpirituous or active Particles : Whence it is often ſerviceable, like other fine and volatile Aromaticks, in ſcorbutick Affections, Apoplexies,

and Palſies. However, we muſt be cautious not to adminiſter it indiſcreetly to Perſons of hot Temperaments; for by its Uſe the Fibres are rendered too dry, and the Humours, already too thick, are further inſpiſſated, and ſo the Diſeaſe is either augmented, or changed into a worſe. It is given in Subſtance from gr. vj. to ʒſs. and to ʒij. infuſed in Wine, or in hot Water like Tea.

Take long Zedoary and the true Acorus ana ʒſs. of Cinnamon ℈j. Infuſe in ℥vj. of boiling Water, and give the ſtrained Liquor ſweetened with Sugar.

Take Zedoary and Sugar, ana ʒiij. of *Peruvian* Balſam gutt. xij. Make a Powder for twelve Doſes. Or,

Take Zedoary, Acorus, Galangal, Angelica, and Cinnamon, ana ʒj. Cloves and Ambergreaſe ana ℈ſs. Sugar of Roſes ʒvj. Make a ſtomachick Powder. The Doſe is ʒj. in a Draught of Wine before Meals, or immediately after, to help Digeſtion, and reſtore the relaxed Tone of the Stomach, or to allay flatulent colick Pains.

Take of Zedoary powdered gr. vij. Citron-Juice ℥ſs. Spirit of Sulphur gutt. ij. Mix and give it againſt a Nauſea, and to ſtop Vomiting.

Take of Zedoary ʒiij. Florentine Orris ʒij. Infuſe them a Night in ℥vj. of ſtrong Wine, and ſtrain. Let the Patient take a Spoonful or two at proper Intervals to help Expectoration.

Take Zedoary, Caſtor, Snake-Root, and wild Valerian ana ʒj. Spirit of Hartſhorn with Amber q. ſ. Draw a Tincture ſ. a. which from gutt. j. to x. in a ſuitable Vehicle, is an excellent Remedy in hyſterical Affections.

A Tinc-

A Tincture, and Extract alſo, are prepared from Zedoary either with Spirit of Wine, or with Wine.

The freſh Root is uſually candied with Sugar, and is good to ſtrengthen the Stomach.

ARTIC. XX. *Of* GINGER.

Zingiber ſive Gingiber, *Off.* Σιγγίβερις, *Dioſc. et Gal. Zimpiperi et Zingiberi*, *Plin.* Ginger is a tuberous, knotty Root, divided into Branches, flattiſh, ſomewhat fibrous in its Subſtance, of a pale or yellowiſh Colour, and covered with a thin browniſh Pellicle, which is uſually ſtripped off before it comes to us, when the Root is freſh. It has an extremely acrid, hot, aromatick Taſte, like Pepper, and a fragrant Smell. It is brought from *China*, *Malabar* and *Ceylon*; and alſo from ſome Provinces of *America*. *China* Ginger being the leaſt fibrous or ſtringy, is moſt eſteemed. It ought to be freſh, of a white or pale Colour, and good Smell. When it is worm-eaten and duſty, it is bad; or when its Surface is ſpread over with Bole or Chalk to conceal Worm-Holes, to which it is very liable.

The Plant is called *Zingiber anguſtiori folio*, *fœmina*, *utriuſque Indiæ alumna*, *Plukn. Almag.* p. 397. *Iris latifolia tuberoſa*, *Zingiber dicta*, *flore albo*, *H. Oxon. Mangaratia*, *Piſonis: Gingibil*, *Bontii*; *Chilli Indiæ Orientalis*, *ſeu Zingiber fœmina*, *Hernandez*; *Inſchi*, *vel Inſchi-Kua*, *Hort. Malabar.*

It is cultivated in all the Provinces of the *Indies*. It does not ſeem to be a Native of *America*, but to have been tranſplanted from the *Eaſt Indies*, or *Philippine* Iſlands, into *New Spain* and *Braſile*.

Another *Species* is diſtinguiſhed *Zingiber Sylveſtre mas*, *Piſon. Mantiſs. arom. Anchoas ſeu Zingiber mas*, *Hernand. Katou-Inſchi-Kua*, *Hort. Malabar*, which differs

differs little from the former. The Leaves are ſomething broader and rougher. The Roots alſo are larger, and having a weaker Smell and Taſte, are not ſo valuable.

The Roots of Ginger are gathered every Year after the Flowers are withered, and, the exterior Bark being taken off, are thrown into a Brine or Pickle: Where having lain an Hour or two in Maceration, they are expoſed as long to the Heat of the Sun; and then are ſpread upon Mats in the Shade, till they are quite dry.

The *Indians* uſe the Leaves of the Plant in Sallads, Soops, and other culinary Preparations. The green Roots alſo, cut ſmall with other Herbs, are eat in Sallads with Oil, Salt and Vinegar. They are likewiſe candied with Sugar and ſerved up in Deſerts.

Ginger yields in Diſtillation an unpleaſant and extremely acrid eſſential Oil. It abounds with a volatile oily Salt, replete with an hot or fiery Principle, to which its Smell, Taſte and Virtues are owing.

Galen concludes, that the Parts whereof it conſiſts are not ſo fine as the Parts of Pepper, becauſe its Taſte, though equally ſtrong, is not immediately perceptible in the Mouth: And the Heat which proceeds from Ginger, continuing longer, than that from Pepper, he thence alſo infers, that its Subſtance is more groſs and moiſt.

Dioſcorides ſays it gently relaxes the Belly: Which is true, if the Roots are eat while they are freſh and tender; but when kept for ſome Time they are rather drying and aſtringent.

Freſh Ginger is reckoned by the *Indians* an excellent Remedy againſt colick Pains, the celiack and lienterick Paſſions, long Diarrhœas proceeding from Cold, Flatulencies, Gripings of the Belly, and other Diſor-

Diſorders of the like Nature. Being taken dry, it ſtrengthens the Stomach and promotes Concoction, deterges and diſſipates Infarctions of the Stomach and Lungs, conſuming the ſuperfluous Humidity. It ſtrengthens the Brain and helps the Memory, and is good againſt Dimneſs of Sight, when owing to Moiſture. It provokes Luſt, expels Wind, and is mixed with Antidotes as an Alexipharmack. It is often joined with Catharticks, either to increaſe their Force, or to correct their noxious Qualities.

This Caution, however, is always neceſſary to be obſerved, that they whoſe Blood is hot and bilious, whether in Health or ſick, are to uſe it very ſparingly; becauſe Ginger, either dry, freſh, or preſerved in Syrup, inflames the Blood and opens the Orifices of the Veins. Moreover, it ought not to be given in a large Doſe to Melancholicks; becauſe it renders the melancholick Humours thicker, more fixt, and ſometimes, ſays *Herman*, altogether immoveable.

It may be taken in Subſtance by itſelf from gr. v. to xv. but is ſeldom ordered ſo by Reaſon of its Acrimony. The Doſe in Decoction or Infuſion is from ʒſs. to ℥ſs. and to ℥j. candied.

Take of candied Ginger ʒſs. Conſerve of red Roſes and candied Lemon-Peel ana ℥ij. Extract of Juniper Berries ℥ſs. Cinnamon and Nutmeg ana ʒiſs. Syrup of Citron-Peel, or of Quinces, q. ſ. Mix and make an Electuary, of which ʒij. may be taken immediately after Meals to help Digeſtion.

CHAP. II.

Of BARKS.

ARTIC. I. *Of* CINNAMON.

THERE was a very near Affinity between the Cinnamon of the Ancients and their Caſſia, if we may not rather ſuppoſe they were the Produce of the ſame Tree.

The *Greek* Writers diſtinguiſh two principal Kinds of Caſſia (*viz.*) 1. Κασία σύριγξ or συρίγγις, *Caſſia fiſtula* or *fiſtularis*, which was nothing but the Bark of a Tree convoluted into Tubes. 2. ξυλικὴ Κασία or ξυλοκασία, *Caſſia lignea*, which was the ſmall Branches of a Tree entire with the Bark upon them. This *Dioſcorides* calls βλαστὸς μοσυλίτης, the *Moſylitic* Branch.

Caſſia fiſtularis, according to *Galen*, was very common and ſold extremely cheap, and was the Sort which both the older and younger *Andromachus* required in the Compoſition of their *Theriaca**. The other *Species* of *Caſſia* or *Xylocaſſia*, of which *Galen* enumerates many, were much ſcarcer.

* For this the modern *Greeks* ſubſtituted what they, and we after them, term *Caſſia lignea*; though very improperly, ſince it is only a Bark. It was perhaps an entire Stranger to the Ancients; for although M. *Geoffroy* in his Account of it conjectures, that among ſo many Sorts of Caſſia, this might poſſibly be known to them; yet he obſerves, that neither *Dioſcorides* nor *Galen* have mentioned its Slimineſs upon being chewed, which is ſo remarkable, that it would ſcarce have eſcaped their Notice. However, this bark has continued down to our Time an Ingredient in the *Theriaca*, &c. but the College have now expunged it, and ordered in its Stead an additional Quantity of Cinnamon.

The

The *Greeks* likewiſe make Mention of many Kinds of Cinnamon differing not greatly from each other; as, 1. Μόσυλον, the *Moſylitic* Cinnamon, which was the beſt. It was of a dark or vinous Colour inclining to gray, ſmooth, and in ſlender Sprigs or Branches encompaſſed in many Places with Knots, of a ſharp, biting, hot and ſomewhat ſaline Taſte. 2. ὀρεινὸν, the Mountain Cinnamon. 3. μέλαν, the black. 4. ὑπό κιρρόν, the yellowiſh; to which they add the *Xylo-Cinnamomum* and *Pſeudo-Cinnamomum*.

Whatever Diſtinction the ancient *Greeks* would make between Cinnamon and Caſſia is found to conſiſt altogether in this (*viz.*) that Cinnamon had a grateful, ſweet, aromatick Smell and Taſte, far excelling Caſſia. And indeed *Galen* obſerves, that the beſt Caſſia differed very little from the worſt Cinnamon, and was ſubſtituted inſtead of Cinnamon, but in a double Quantity.

Now, whether the Cinnamon and Caſſia of the Ancients were one and the ſame Thing, and the ſame with our Cinnamon, or no, is a Point of much Diſpute among Authors. Many of them, among whom is *Matthiolus*, ſuppoſe the Caſſia of *Dioſcorides* to be our Cinnamon, and the Cinnamon of the Ancients to be entirely unknown to us. Others, with *Dodonæus*, imagine their Cinnamon to have been the Sprigs or younger Branches of the Clove-Tree. Others, again, believe that Cinnamon and Caſſia were the ſame Thing, that is, were produced from the ſame Tree; only with this Difference, that Caſſia, as it was commonly brought to them, was the Bark ſeparated from the Wood, and Cinnamon the ſlender Sprigs of the Tree entire: Which appears to me moſt probable. For *Dioſcorides* affirms, that Cinnamon has ſome Likeneſs of the Caſſia which is termed *Moſylitis*; and *Galen* aſſerts, that Cinnamon in its Nature is in ſome

Meaſure like the beſt Caſſia, which the Barbarians call *Gizi*. Beſides, he tells us that he had ſeen ſome Branches of Caſſia, grown up to the Bigneſs of a Shrub, which in Appearance and the Thinneſs of its Bark entirely reſembled Cinnamon, as alſo in the moſt diſtinguiſhing Qualities of Taſte and Smell. Moreover, foraſmuch as *Theophraſtus* and other ancient Writers obſerve, that in Cinnamon the Bark alone is uſeful, I think it may thence more probably be inferred, that our Cinnamon is the ſame with that of the Ancients, and that the ſeveral *Species* of their Cinnamon, Caſſia and *Xylocaſſia*, differed only in the Manner in which they were brought to them, or from the Soils wherein they grew. For in the primitive Ages of Phyſick, under the Name of Cinnamon, the ſmall Plant or the younger Sprigs were brought entire, and under the Name of Caſſia, only the Bark: But when they conſidered that the woody Part of Cinnamon was altogether uſeleſs, it was rejected, and the Bark was afterwards brought alone; which Cuſtom has been preſerved down to the preſent Time. Nor was the Difference alſo ſmall which proceeded from the Climate or Soil wherein they grew; as at this Time it is obſerved that the ſame *Species* of Cinnamon-Tree growing in different Countries affords a different Bark. Thus the Cinnamon of *Ceylon*, *Malabar*, and *Java*, differ from each other; and likewiſe the wild from the cultivated. Again, according to the different Age of the Tree, or the different Parts from which the Bark is taken, there ariſes a conſiderable Variety: The Cinnamon of a young Tree differs from that of an old one, the Bark of the Trunk from that of the Branches, and the Bark of the Root differs from both.

The Accounts which the Ancients have given of the Origin of Cinnamon and Caſſia are full of Fables

Fables and Uncertainties: We ſhall therefore purpoſely wave them, and proceed to the Hiſtory of the Cinnamon of our Shops.

Cinnamomum ſive Canella vulgaris Off. The officinal Cinnamon is a thin Bark, commonly about as thick as a Card, though ſometimes equal to two Lines or the ſixth Part of an Inch, convoluted into ſlender Tubes or Quills a Cubit and Half long, or more, and as broad as one's Finger, of a woody and fibrous Subſtance, yet brittle, ſometimes marked on its Surface with Wrinkles, ſometimes ſmooth, of a reddiſh yellow Colour, or like the Ruſt of Iron, having a ſweetiſh, aromatick, pungent or biting Taſte, but creating no uneaſy Senſation upon the Tongue, and a ſweet and fragrant Smell.

It is the ſecond and interior Bark of a Tree which is called *Cinnamomum ſive Canella Zeylanica*, C. B. P. *Laurus Zeylanica baccis calyculatis Hermanni*, *Raii Hiſt. Caſſia cinnamomea*, *H. Lugd. Bat. Canella quæ Cuurdo*, *Piſon. Mantiſs. arom. Arbor canellifera Zeylanica*, *cortice acerrimo ſeu præſtantiſſimo*, *qui Cinnamomum Officinarum*, *Breyn.* 2. *Prodr. Cinnamomum foliis latis*, *ovatis*, *frugiferum*, *Burm. Thes. Zeyl.* p. 62. *Tab.* 27. *Laurus foliis oblongovatis*, *trinerviis*, *nitidis*, *planis*, *Lin. H. Cliff.* 154. It grows in *Ceylon*, where it is as common in the Woods and Hedges as the Haſel-Tree is with us.

When the Tree is of about three Years Growth, the Bark of the ſmaller Branches is ſtripped off. This is done either in the Spring or Autumn, at which Seaſons a ſufficient Stock of Sap is contained betwixt the Wood and the Bark; though more commonly in Spring when the Trees begin to flower. In the next Place, the cineritious and rough exterior Coat is pared away, and the other being cut into long flat Pieces is expoſed to the Sun, where it turns up of its own Accord into Tubes. The

Tree afterwards continues naked for two or three Years, and then produces a new Bark, which is again fit for the ſame Management.

The beſt Cinnamon is of a yellowiſh Colour with a Caſt of red, of a delightful Smell and aromatick, with a pungent Taſte, yet ſomething ſweet and agreeable. The Virtue of this Bark ſeems to be wholly included in the fine interior Pellicle; for, according to *Herman*, more Oil has been obtained from one Pound of that, than from ſix Pounds of the entire Bark.

A wonderful Variety of odoriferous Oil may be drawn from the ſeveral Parts of this Tree. The Bark being diſtilled when it is freſh gives up a large Quantity of Oil, though when it is old, or has been long kept, it affords but little. The Oil obtained from it is twofold; the one being put into Water ſwims at the Top, and the other falls to the Bottom. The firſt is of a pale Colour, and the laſt yellowiſh and reddiſh. Both are tranſparent, of a very fragrant Scent, and extremely pungent Taſte upon the Tongue.

By Diſtillation from the Bark of the Root, are drawn an Oil, and a volatile Salt or Camphore. The Oil is lighter than Water, tranſparent, yellowiſh, and ſubtile, eaſily diſſipating in the Air, and of a ſtrong, quick, agreeable Scent, between Camphore and Cinnamon. The Camphore is of a fine white Colour, in Sweetneſs of Smell far excelling common Camphore, highly volatile ſo as to be eaſily diſſipated, readily taking Fire, and leaving no *Fæces* after Deflagration.

The Oil diſtilled from the Leaves ſinks in Water, is at firſt foul, but becomes in Time yellowiſh and tranſparent, of a ſweetiſh, pungent, aromatick Taſte, with a gentle Smell of Cinnamon, in ſome Meaſure partaking of the Smell of Cloves.

The

The Fruit affords a twofold Subſtance (*viz.*) by Diſtillation, an eſſential Oil like that of Juniper mixed with a little Cinnamon and Cloves; and by Decoction, a thick Kind of Fat, reſembling Suet both in Conſiſtence and Colour, and of a fragrant Smell. This is uſed by the Natives of *Ceylon* in Unguents; and Candles are made of it, which no Perſon is permitted to burn but their King. Moreover, in the Trunks of old Trees may be found ſome reſinous Knots, ſmelling pretty much like the *Oleum Rhodii*.

Cinnamon abounds with an eſſential Salt both acid and urinous, approaching to a *Sal ammoniac*, and mixed with an eſſential aromatick Oil, to which its Energy ſeems to be chiefly owing. The Moderns allow the ſame Virtues to our Cinnamon, which the Ancients attributed to their Cinnamon and Caſſia (*viz.*) that it heats, dries, opens, diſcuſſes, is alexipharmack, reſiſts Poiſons and Malignity of the Humours, removes Putrefaction, promotes the menſtrual Diſcharges, forwards Delivery, ſtrengthens the Bowels, cheers the Spirits, helps Concoction, and expels Wind. The Uſe of it is very common in Weakneſs, Swooning, malignant Fevers, cold Affections of the Head, Breaſt, Stomach and Womb, and in colick Pains. It is ſerviceable alſo in Suppreſſion of the *Menſes* and difficult Labour. The Doſe in Subſtance is from ℈j. to ʒſs. or ʒj. and in Infuſion from ʒſs. to ʒij.

A ſpirituous Water is drawn from Cinnamon of the ſame Virtues with the Bark in Subſtance. Thus.

Take of Cinnamon bruiſed ℔j. white Wine and the diſtilled Water of Baum ā ℔iij. Having been macerated together for 24 Hours, draw off the Liquor with a ſtrong Fire from an Alembick with a Refrigeratory. The firſt

three Pints only are to be put by for Uſe, the Water which comes over afterwards being too weak.

This Water is foul and whitiſh, or milky, as it were, from a Mixture of the oily Parts of the Cinnamon with the Water. Some require a Water of Cinnamon hordeated, that is, a Water drawn from a Decoction of Barley, wherein a certain Quantity of Cinnamon has been macerated. But the Particles of Barley are entirely uſeleſs in this *Menſtruum*, ſince they rather hinder the Evolution of the Salino-oleous Parts of the Cinnamon, than promote it; neither are they capable of riſing in Diſtillation. It is therefore better, if we would obtund the Force of the Cinnamon, to give the Water above deſcribed in a Decoction or Cream of Barley, or an Emulſion.

A Syrup of Cinnamon is prepared as follows.

Take of the ſpirituous Water of Cinnamon ℔j. Cinnamon bruiſed ℥ij. Let them ſtand in Digeſtion 24 Hours, and decant the Tincture. Then diſſolve ℔ij. of fine white Sugar in Baum-Water, and boil to the Conſiſtence of a ſolid Electuary; upon which pour the Tincture gradually and make a Syrup f. a. The Doſe is ʒj.

The eſſential Oil is obtained in the ſame Manner as other eſſential Oils; namely, by macerating the Cinnamon in a large Quantity of Water, and drawing it off with a Fire ſufficiently ſtrong. The Water comes over foul and milky, but after ſome Time becomes limpid from a Separation of the Oil, whereof the greater Part ſubſides to the Bottom, and the other riſes to the Top. The yellowiſh Oil

Oil which ſubſides is ſeparated from the Water and put by for Uſe. This Oil being extremely pungent and hot is ſeldom preſcribed alone, but joined with Sugar in the Form of an *Elæoſaccharum*, to be diſſolved in a proper Vehicle. It is given from gut. j. to iij. having the ſame Virtues with Cinnamon, but in a greater Degree of Strength. It is in great Eſteem for abating the Violence of Catharticks, and on this Account is found in moſt purging Pills and Extracts; and alſo as it gives to ſuch Compoſitions an agreeable Scent. It eaſes the Tooth-ache being dropped upon Cotton and put into the Hollow of the Tooth; for by its cauſtick Acrimony it burns the Nerve and deſtroys its Senſation.

Take of Cinnamon in Powder ʒſs. of fine Filings of Iron ʒiij. white Sugar ℥ſs. Mix and make a Powder. The Doſe is ʒj. in the Greenſickneſs.

Take of powdered Cinnamon ʒſs. Extract of Saffron gr. vj. the chalybeated Flowers of Sal Ammoniac ℈ſs. Mix, and with q. ſ. of the Conſerve of Orange-Flowers make a Bolus to be given in a Suppreſſion of the *Menſes*.

Take of Cinnamon ℈j. Saffron powdered ℈ſs. Syrup of Kermes q. ſ. Mix and make a Bolus for difficult Labour.

Take of the Powder of Cinnamon ʒx. Ginger and Cloves ā ʒj. Galangal, Mace, Nutmeg and the yellow Peel of Citron ā ʒij. and with ℔j. of Sugar diſſolved and boiled in Roſe-Water make Tablets ſ. a. They are agreeable to take, and may be uſed to the Quantity of ʒij. in the Morning faſting, and after Meals, to help Concoction, diſcuſs Wind and ſtrengthen the Stomach.

Take of Cinnamon-Water ℥ſs. Mugwort and Orange-Flower Water ā ℥j. the Confection of Kermes ʒſs. Make a Mixture to be uſed in difficult Labour.

Take of Cinnamon-Water ℥ſs. Baum and Carduus-Water ā ℥iij. Syrup of Cinnamon ℥j. Make a Julep to be given by Spoonfuls in Loſs of Strength, Swooning, and malignant Fevers.

Take of Cinnamon-Water ℥ij. Syrup of Lemons ℥j. Salt of Wormwood ℈ij. Make a Mixture and let a Spoonful be taken now and then to appeaſe a *Nauſea*, Vomiting, and Anxiety about the Heart in malignant Fevers.

Take of the Oil of Cinnamon gut. iij. white Loaf-Sugar ʒiij. Make an *Elæoſaccharum* to be diſſolved in ſtrong Wine and drank in difficult Labour.

It is to be obſerved, that an immoderate and unſeaſonable Uſe of Aromaticks, like this, diſpoſes the Stomach to Inflammation, ſhrivels its Fibres, and conſtringes and ſhuts up the Orifices of its Glands. Whence, from a Deficiency of the gaſtrick Juice, with a ſpaſmodick and inflammatory Tenſion of the Stomach, a depraved Concoction neceſſarily follows; the Food produces Labour and Anxiety in the Stomach, and is propelled into the Inteſtines with great Difficulty; and this Miſchief at length is communicated over the whole Body to the Prejudice of all its Functions. Moreover, by Aromaticks too freely given the Juices are rendered acrid, thick, and languid in their circulatory Motion, and ſo the due Secretion of them being hindered, are brought on Obſtructions of the Liver, Kidneys and other Bowels; or Inflammations, Cachexies, Atrophies, Dropſies, melancholick

lancholick and hypochondriack Affections, with other Diſeaſes of the like Nature. Therefore, to repeat a Caution which we have before inculcated, in giving theſe warm Stomachicks, we ought to conſider well of their Agreeableneſs to the State and Conſtitution of the Patient; and likewiſe to take Care not to perſiſt too long in uſing them.

ARTIC. II. *Of white* CANEL.

Canella alba et Cortex Winteranus ſpurius, Off. This is the Bark of a Tree rolled up into oblong Tubes like Cinnamon, but is thicker, and of a whitiſh Colour both on the outſide and within, of a fragrant Smell, and hot, biting, aromatick Taſte, reſembling as it were a compound Taſte of Cinnamon, Ginger and Cloves. It ſeems to have been unknown before the Diſcovery of *America*, and conſequently was a Stranger to the *Greeks* and *Arabians*. Some diſtinguiſh two Sorts of it; but they differ only in the Bulk, Length and Thickneſs of the Tubes, both Sorts being the Bark of the ſame Tree; one the Bark of the Trunk, and the other of the Branches.

The Tree is called *Canella alba quorumdam*, J. B. *Canella Cubana Jonſton*: *Arbor jucaci Nieremberg*: *Caſſia lignea Jamaicenſis, cortice acri, candicante, Plukn. Phyt. Arbor baccifera, laurifolia, aromatica, fructu viridi calyculato, racemoſo, Sloane Philoſ. Tranſ.* No. 192. *et Hiſt. Jamaic.* Vol. 2. p. 87. *Cateſb. Hiſt. natur.* Vol. 2. p. 50. Fig. 50. *Winzterania, Lin. Hort. Cliff.* 488. It grows in the moiſt and woody Parts of *Jamaica* and other *American* Iſlands. The Bark is ſtripped from the Trunk and Branches, and being cleared of the exterior Coat, is put in the Shade to dry, and then laid up under the Name of *Canella alba*, or *Cortex Winteranus*, with which it

it has been confounded by ſome Authors, though their Difference is manifeſt; for the true *Cortex Winteranus* is thicker, as alſo of a darker Colour, ſomewhat reſembling Cinnamon, and of a more acrid hot Taſte, like Pepper or Ginger.

The Inhabitants of thoſe Countries where white Canel is produced, make uſe of it in Diet and for ſeaſoning Meat, inſtead of Cloves and Pepper. It abounds with an eſſential aromatick Oil, which is obtained by Diſtillation after the Bark has been macerated in Water. This Oil is of a yellowiſh Colour and heavier than Water. It is ſometimes uſed to adulterate Oil of Cloves, having much the ſame Smell.

As to the Virtues of this Bark, it is not only mixed with Food as a Stomachick, but is alſo commended againſt the Scurvy. It diſcuſſes Flatulencies, cures catarrhous Affections, and is very beneficial in Palſies. The Doſe in Subſtance is from ℈ſs. to ʒj. and to ʒij. in Infuſion. The true *Winter's Bark* being ſeldom to be met with in the Shops, this is commonly ſubſtituted for it. It is to be obſerved, that in bilious and hot Temperaments this Medicine is hurtful.

ARTIC. III. *Of the* PERUVIAN BARK, *and* CASCARIL.

Quinquina, Kina Kina, Cortex Peruvianus, Cortex febrifugus, Off. This ineſtimable Drug is the dry Bark of a Tree, two or three Lines thick, rough on the outſide, of a brown Colour, ſometimes covered with a whitiſh Moſs, ſmooth within, ſomewhat reſinous, and of a reddiſh Colour, or like the Ruſt of Iron; having an intenſe bitter and gentle aſtringent Taſte, with ſomething agreeably aromatick. It is ſometimes brought to us in thicker

thicker Pieces, three or four Inches long or more, an Inch broad, and not convoluted; which are got from the Trunk of the Tree. Sometimes in Quills a little convoluted, not ſo thick as the former, externally of a brown Colour, ſlightly marked with circular Fiſſures, covered with Moſs, and of a reddiſh Colour within; which are taken from the ſlender Branches. Sometimes alſo it comes to us cut into ſmall Pieces, of a whitiſh Colour on the outſide, and yellowiſh within. This is ſaid to be the Bark of the Root, and is in the greateſt Eſteem with the *Spaniards*.

It ought to be choſen of a brown or reddiſh Colour, reſembling the Colour of Cinnamon, of an aromatick bitter Taſte, not unpleaſant, of a Kind of mouldy Smell, as it were, gently aromatick, and friable under the Teeth. When it is viſcid and glutinous, woody, decayed with Age, inſipid, or adulterated with other Barks which have been dipt in the Juice of *Aloes*, it ought to be rejected.

The Tree producing the *Peruvian* Bark is called *Arbor febrifuga Peruviana*, *China Chinæ*, *Quinquina et Ganeperide*, *dicta*, *Raii Hiſt.* and by the *Spaniards*, *Palo de Calenturas*. It grows ſpontaneouſly in *Peru*, particularly upon the Hills near *Loxa* or *Loja*, at the Diſtance of about ſixty Leagues from *Quito*.

The antifebrile Virtue of this Bark, as we have already related *, was firſt diſcovered by meer Chance,

* The Account we have of its firſt Diſcovery is this. Some Trees which bear it being thrown by Wind, or ſome other Accident, into a Pool of Water, lay there till the Water acquired ſo bitter a Taſte that no Perſon could drink it. However, one of the neighbouring Inhabitants being ſeized with a violent Fit of a Fever, and finding no other Water to quench his Thirſt,

Chance, and had been known to the *Indians* in *America* long before the Arrival of *Columbus:* But from an implacable Hatred which they had conceived againſt the *Spaniards*, it was kept a great Secret till the Year 1640. At which Time a certain *Indian* having received ſome Favours from a *Spaniard*, then Governor of *Loxa*, he imparted to him the Knowledge of this invaluable Specifick by Way of Gratuity. It happened not long after in *Lima*, the *Metropolis* of *Peru*, that the Wife of *Count del Cinchon*, at that Time Vice-Roy of *Peru*, was ſeized with a violent intermitting Fever, ſuch as is commonly epidemical in that Country. The Governor hearing of this, informed the Count by Letter that he knew a Remedy, which, he could abſolutely promiſe, would ſpeedily cure his Counteſs. She finding no Relief from other Medicines, readily conſented to take it, and to the Surprize of all grew well in a very ſhort Time. Hence it became famous all over the *Spaniſh* Dominions in *America*, under the Name of the *Counteſs's Powder:* And the Vice-Roy returning ſoon after to *Spain*, a Rumour was immediately ſpread abroad there concerning this new Febrifuge; which was found, after frequent Trials, always to anſwer the Expectations of the Sick. About the Year 1649, the Provincial of the Jeſuits in *America*, being recalled to a general Aſſembly of his Order at *Rome*,

Thirſt, was forced to drink of this; by which he was perfectly cured both of his Fever and Thirſt. Upon this, he related the Experiment he had made to others, and prevailed upon ſome of his Friends, who were ill of Fevers, to make uſe of the ſame Remedy; which accordingly they did, and with equal Succeſs. But the Trees after ſome Time becoming rotten, and the Water loſing its bitter Taſte and its Virtue, they made a diligent Search after the Cauſe of this Bitterneſs, and antifebrile Quality in the Water; and at length traced it up to the Bark of theſe Trees. *Introd. ad Mat. Med.* p. 48,

carried along with him a large Quantity of this Bark, which he diſtributed to a great Number of his Society who had repaired thither from all Parts of the World. When theſe Jeſuits were again diſperſed to their reſpective Stations, they made uſe of it with ſo great Succeſs, againſt all Kinds of intermitting Fevers, that both Phyſicians and all other People were aſtoniſhed; and hence it was called *Pulvis Patrum*, and in *England* the *Jeſuits Powder*. Some alſo gave it the Name of *Cardinal de Lugo*'s *Powder*, becauſe that charitable Prelate bought up large Quantities of it, at a great Expence, for the Uſe of the Religious and Poor of *Rome*.

But whilſt the Fame of this Febrifuge was ſpread throughout *Europe*, many Phyſicians were in much Doubt concerning it. Theſe being ſtill blinded with the old Notions of ſenſible Humours and Qualities, and obſerving that this Remedy cured the worſt Fevers very ſoon and without any plentiful Evacuation, ſuſpected that it detained the morbid Ferment in the Body, and that it might therefore give Riſe to ſome untowardly Symptoms: So that whatever happened amiſs, never failed to be aſcribed to the Medicine; although it was owing, in Reality, to a too ſparing Uſe of it, and to the Remains of the primary Diſeaſe, which was not entirely conquered. For at that Time they gave no more than one or two Drachms to cure an intermitting Fever, whereas Experience has ſince taught us, that to eradicate the Diſeaſe a larger Quantity is required. Others, again, obſerved that it only put by a few Fits without totally ſubduing the Fever, the Patient being generally ſubject to a Relapſe. From theſe Suſpicions, and alſo becauſe it was then ſold at an exorbitant Price, it fell by Degrees into Diſuſe; till one *Robert Tabor*, an *Engliſh* Knight,

Knight, brought it into Vogue again in *France*, under the Name of the *Engliſh Remedy*. This Gentleman was no leſs bold in his Practice, than ſucceſsful; for he did not confine himſelf to Scruples and Drachms, but ventured upon it even to Ounces and Pounds; always concealing, with the greateſt Care, the Medicine and the Method of preparing it. Hence he gained great Reputation both to himſelf and his Remedy: Whereupon *Lewis* XIV. purchaſed the Secret of him for a large Sum of Money, and made it publick.

In a chymical *Analyſis*, four Ounces and a Half of the *Peruvian* Bark reduced to a groſs Powder, yielded one Ounce, four Drachms and a Half of acid Phlegm; the firſt Portions of which were merely acid, but the laſt were not only intenſely acid, but withal diſcovered ſome Marks of an alkaline urinous Salt, as well by turning the blue Tincture of Turnſole red, as by making the Solution of corroſive Sublimate foul and milky, and precipitating a white Powder to the Bottom of the Veſſel. Afterwards came over into the Receiver one Drachm and ſixty-eight Grains of thick Oil, ſomething like Hog's Lard. The Weight of the *Reſiduum* in the Retort was one Ounce, two Drachms and eight Grains; which, after it had been calcined to Whiteneſs, weighed one Drachm and fifteen Grains: And from this, by a Lixiviation, was extracted half a Drachm of fixt Salt. Hence it appears that this Bark contains a large Quantity of acid Salt and thick Oil, and but very little urinous Salt and Earth. For it is to be obſerved, that the Quantity of Oil which was contained in this Bark, muſt neceſſarily be more than about two Drachms; ſince the Diminution of the *Reſiduum* in Calcination from one Ounce, two Drachms and eight Grains, to one Drachm and fifteen Grains, is chiefly

chiefly to be accounted for from the Exhalation of the Oil, the Particles of Earth and Salt, which were carried off therewith, bearing but a ſmall Proportion to it. This Mixture of acid Salt and Oil conſtitutes a Reſin, which may be obtained, by the Aſſiſtance of a proper *Menſtruum*, in a Quantity almoſt equal to a fourth Part of the Bark: But the Proportion of Gum is vaſtly leſs. To this we may add, that an Infuſion of the Bark turns blue Paper reddiſh: Whence it is evident, that among its oily Parts it greatly abounds with acid Salts, and that its Energy is, in a great Meaſure, owing to them.

The *Peruvian* Bark is reckoned, with other Bitters, in the Number of Stomachicks. It ſtrengthens the Stomach, raiſes the Appetite, helps Digeſtion, diſcuſſes Wind, kills Worms, and provokes Urine and the *Menſes*: But it is chiefly to be extolled on Account of its Virtue in conquering intermitting Fevers; for provided it be properly adminiſtered, it cures them with Safety and Speed, and without creating Diſguſt in the Patient. The Doſe in Powder is from ʒſs. to ʒij. either mixed with ſome Liquor, or made into a Bolus with Syrup. An Infuſion thereof, in the Proportion of ℥j. to ℔j. of red Wine, may be given to ℥vj. as may likewiſe a Decoction of it in Water, allowing ℥j. of the Bark to ℔iſs. of Water, and boiling till the third Part is evaporated. Sometimes, in Compliance with the Loathing of the Sick, this Decoction is ordered by Way of Clyſter, to the Quantity of ℔j. for grown up Perſons, and to ℔ſs. for Children. But, in Regard to theſe ſeveral Ways of preſcribing it, we muſt take Notice that it is more efficacious in Powder than in Decoction or Infuſion; and that the Infuſion in Wine is much better, than an Infuſion or Decoction in an aqueous *Menſtruum*;

ſtruum; and, laſtly, that theſe Infuſions and Decoctions are ſtronger or weaker in Proportion to their Foulneſs or Clearneſs, or as they are more or leſs loaded with the fine Particles of the Medicine. Moreover we muſt obſerve, notwithſtanding ſome are of a contrary Opinion, that Clyſters made of the Bark ought to be ſtrained; ſince a large Quantity of the Powder, ſuppoſe four or five Ounces a Day, being thrown into the Inteſtines, produces Coſtiveneſs, Obſtructions of the Bowels, and Inflammations, which ſometimes terminate in Impoſthumes.

In whatever Manner this Febrifuge is given, it ought to be repeated every third or fourth Hour; but ſuppoſing always that due Preparatives have been uſed. For in ſimple intermitting Fevers, as a tertian or quartan, we are to examine, in the firſt Place, if there be any Indication either to open a Vein or to purge; and accordingly, on the Days of Intermiſſion, the Patient muſt be prepared by Blood-letting or purging. Blood-letting, in particular, ought to be performed with a liberal Hand, and to be repeated according to Neceſſity, before the Bark is given; for then it exerts its Efficacy ſooner and with greater Safety. Indeed, if the Blood-Veſſels be not ſufficiently evacuated, we ſhall find it extremely difficult to ſubdue a ſtubborn Fever with the Bark. Perhaps the Diſeaſe, after a tedious Repetition of the Febrifuge, may ſeem at length to be deſtroyed; yet the Patient recovers no Strength, and ſoon after ſuffers a Relapſe, unleſs more Blood be drawn away; which being done during the Uſe of the Medicine, the Fever is immediately extinguiſhed, and the Strength of the Patient returns in a ſhort Time. Reaſon itſelf points out this Method of Practice: For the Bark expands and rarefies the Blood, as we may obſerve in

in all Perſons who daily take it, whoſe Pulſe is full and high, though ſoft. It is therefore evident that the Blood ſtands in need of a larger Space; which is procured to it by opening a Vein. As to purging it is not ſo neceſſary, except the firſt Paſſages are very full; becauſe the Bark, for a few Days at the Beginning, frequently operates as a Cathartick.

Therefore in a tertian or quartan Fever, after the Patient has been prepared by Blood-letting, and likewiſe by Purging, if requiſite, let him take the firſt Doſe of the Bark immediately after a Paroxyſm; repeating it afterwards every fourth Hour, that is, about five or ſix Times in the Space of a natural Day. He muſt eat ſome Food of eaſy Digeſtion, and good Nouriſhment, two Hours after the Medicine. When the Fits have entirely ceaſed, let him take only four Doſes a Day for eight Days; afterwards three Doſes for a Week longer; and, laſtly, two Doſes for eight Days more. However, in this a due Regard muſt be had to the Diſeaſe, the Seaſon, and the Age of the Patient. For a Fever which is attended with bad Symptoms and long Paroxyſms, which invades in Autumn, or when the ſick Perſon is old or valetudinary, requires a longer Uſe of the Bark, than when the Paroxyſms are ſhort without any bad Symptom, or when it happens in the Beginning of the Spring, and to younger People. A proper Diet is to be obſerved, not only during the Uſe of the Bark, but for a long Time after.

Moreover, no Purge ought to be given for ſeveral Weeks, or rather Months, after the Cure, but upon ſome very preſſing Indication; and then a Doſe of the Febrifuge muſt be taken the ſame Day with the Purge, and be twice or thrice repeated for ſome Days following, leſt the Fever ſhould

be recalled by the Evacuation. But a Relapſe is not only occaſioned by purging, but very frequently by the leaſt Error in Point of Diet, by a ſlight Cold, or other trivial Cauſes. Wherefore, by Way of Prevention in bad Fevers which have been cured by the Bark, it is adviſeable to order a Repetition of the ſame twice or thrice, at the Diſtance of eight or ten Days; eſpecially if the Winter be coming on, which Seaſon, on Account of the uncertain *Intemperies* of the Air, is very much to be feared. And this is a ſure Way to prevent a Return in the moſt ſtubborn intermitting Fevers.

In compound intermitting Fevers, as a double tertian, a triple quartan, or a quotidian, (whether there be a perfect Intermiſſion or only a Remiſſion of the febrile Efferveſcence) after letting Blood, and purging either upwards or downwards, we muſt begin with the Bark; or if the Diſeaſe be very violent, we muſt give it immediately after opening a Vein, without further Preparation; and notwithſtanding this, we may order Blood-letting to be repeated as often as the Caſe requires. For the previous Uſe of the Bark is ſo far from rendering it improper to take away Blood, that the Patient bears the Loſs of it better, and ſooner receives Benefit from the Medicine. If an Evacuation by Stool be neceſſary, and the Violence of the Fever will not allow a ſufficient Time for it, a Cathartick may be given with the Bark, after a Vein has been opened. But here the Febrifuge ought to be repeated every third Hour both Day and Night till the Fever returns no more, the Patient taking his Food about an Hour after the Medicine. For eight Days following, ſix Doſes muſt be given a Day, one every third Hour; afterwards for a Week, five a Day, one every fourth Hour; for a Week

a Week longer, only four a Day; then three, and at laſt two. The Diet ought to be thin, and no ſolid Food ſhould be ventured upon before the Fever is quite extinguiſhed, and the Patient begins to be hungry.

The *Peruvian* Bark, though continued a long Time, ſeldom cures a Fever before ſome conſiderable Evacuation is brought about; which generally happens either by Stool or Urine: Nor is there a more certain Sign that the Diſeaſe is thoroughly cured than this Evacuation, whereby the febrile Venom is drawn off. It falls out ſometimes ſooner, ſometimes later; but we cannot be well aſſured of the Patient's Recovery before its Appearance. We muſt confeſs indeed, that ſome Perſons have been reſtored to perfect Health without any conſiderable Evacuation that was ſenſible; but in theſe we may conjecture, that an Increaſe of inſenſible Perſpiration ſupplied its Place. If this critical Diſcharge be not made, though the Fever diſappears, yet it ſeems to be rather ſuppreſſed than radically deſtroyed. The Patient remains weak and languid, and without Appetite, till the Fever returns, or a Dropſy, or ſome other cachectick Affection in its ſtead; or perhaps an Abſceſs is formed in ſome Part of the Body. It is, therefore, not without Reaſon that Phyſicians, according to the Diſpoſition of the morbid Humour, ſometimes join proper Catharticks, or Diureticks with the Bark; or ſometimes Diaphoreticks or Sudorificks, in order to throw off the noxious Humour, already ſubdued by the Febrifuge, by thoſe Paſſages to which it diſcovers the greateſt Tendency. For this Humour in intermitting Fevers, eſpecially tertians, is more eaſily evacuated by Stool or Urine; but in malignant Fevers, where it tends towards the Pores of the Skin, it is oftentimes more ſucceſsfully caſt

off by Perſpiration or Sweat. However the Phyſician, to proceed with Judgment in this Matter, ought to have great Regard to the epidemical Conſtitution of the Year, and the peculiar Habit of the ſick Perſon.

Since an intermitting Fever puts on different Diſguiſes, or as the learned Doctor *Morton* expreſſes it, is of a *Proteïform Genius*, frequently counterfeiting many other acute Diſeaſes; ſince this, I ſay, is its various Nature, although the *Peruvian* Bark be the chief and almoſt only Remedy to be depended on, yet the grievous Symptoms which accompany the Diſeaſe, or under which it is concealed, require ſome other ſuitable Medicines to be joined with the Febrifuge; ſuch are Cephalicks, Narcoticks, Pectorals, Stomachicks, Aperients, Uterines, or the like. A Phyſician, therefore, ought to exert great Diſcernment to diſtinguiſh theſe counterfeit Symptoms, to the End that he may diſcover the proper Method of Cure. Sometimes, for Inſtance, an intermitting Fever lies concealed under the Appearance of an extreme Chilneſs, inceſſant Vomiting, a painful *Diarrhœa*, *Cholera morbus*, or Colick in the Stomach, a periodical *Hemicrania*, pricking Pain in the Side, Pleuriſy, Peripneumony, Rheumatiſm, or univerſal Spaſm, and ſometimes Swooning, or even an Apoplexy; whereof Examples may be ſeen in the Obſervations of the illuſtrious *Morton*. Now, as it is not always eaſy to diſcern theſe falſe Symptoms, the Phyſician ought to conſider the epidemical Conſtitution of the Year, and likewiſe the State of his Patient, who having been afflicted perhaps before by an intermitting Fever, which had been only laid aſleep, as it were, ſuffers a Relapſe to his former Diſtemper. Theſe Signs, though not abſolutely infallible, may nevertheleſs induce the Phyſician to obſerve attentively

attentively all the Symptoms and Variations of the Diſeaſe; and then the periodical Return of the worſer Symptoms at ſtated Times will afford a very certain Proof that it is a Fever in Diſguiſe. It ought alſo to be conſidered whether the Fever, which is joined with another Diſeaſe, be only a Symptom of that Diſeaſe, or be an idiopathick Diſeaſe itſelf and complicated with the other: For if it be a Symptom of the other Diſeaſe, it will be in vain to attempt to remove it without curing the idiopathick Diſeaſe at the ſame Time, by mixing the Bark with ſuch Remedies as are indicated. But in a complicated Caſe, the Cure of both Diſeaſes may either be attempted together, or the Fever may be cured by the Bark though the other Diſeaſe ſtill remains.

It ſometimes happens, when the Bark has not been given in due Quantities, that the febrile Matter is ſo far weakened that it no longer produces the uſual Paroxyſm or Exacerbation, but excites only ſome Symptoms; and theſe, though not ſo violent, yet as they continue long, are no leſs troubleſome to the Sick; ſuch are Loſs of Strength and Appetite, a *Nauſea*, Anxiety in the Region of the Breaſt, Oppreſſion of the Stomach, Inflation and Gripings of the Belly, a Cough, Pains of the Head, Night-Sweats, a Dropſy, cachectick and rheumatick Affections, or others of the like Nature. It is cuſtomary with the Vulgar to aſcribe all theſe to the Bark; though very unjuſtly, ſince the too ſparing Uſe of it ought rather to be blamed, or elſe its Badneſs, it being either not genuine, or by ſome Means impaired in its Virtues. For if the beſt Bark be ſelected and given in due Quantities, theſe Diſorders will diſappear in a little Time.

In inflammatory, putrid, malignant, and peſtilential Fevers, the Efficacy of the Bark ſeems in-

ſufficient. And here the Phyſician's Skill ought to be chiefly employed to bring the Diſeaſe to a State wherein it will admit of a Cure by this Remedy. Nevertheleſs *Morton* adviſes it in the Meaſles and Small Pox to be given in the Decline of the Diſtemper, that is, when the Fever, continuing after the perfect Eruption of the morbid Venom, begins to obſerve the Type of a continual Remittent. The Faculty of Phyſick likewiſe at *Naples* have given out that it is a good Remedy againſt the Plague, and have ordered it to be uſed in that Diſeaſe. This we are informed of by *Sebaſtian Badius*, a Phyſician of *Genoa*, in a Treatiſe which he publiſhed in the Year 1663. intitled *Anaſtaſis Corticis Peruviani*, or the *Reſurrection of the Peruvian Bark*; wherein he anſwers *Plempius*, a Phyſician of *Amſterdam*, who had given him an Invitation to the *Funeral of the Peruvian Bark*, in a Treatiſe printed in the Year 1655.

The common People have a Notion, that the Bark is improper for Perſons whoſe Lungs are injured, or who are inclinable to a *Phthiſis* and Conſumption. Nevertheleſs Experience demonſtrates, that it may be given with Succeſs in the putrid remitting or intermitting Fever which follows a Peripneumony or Pleuriſy, or which attends an *Empyema* or an Ulceration of the Lungs, or in that into which an inflammatory Fever is often transformed. This Fever ariſes from putrid and noxious Particles polluting the Blood as it paſſes through the purulent Parts; whence are occaſioned every Day, or every other Day, febrile Exacerbations or Paroxyſms. Now, the *Peruvian* Bark ſuppreſſes, for ſome Time at leaſt, theſe Paroxyſms; and further, if it be joined with pectoral, balſamick and deterſive Medicines, the Fever is totally extinguiſhed, the *Pus* excreted, and the Ulcers are healed,

healed. According to Dr. *Morton*, ſome phthiſical Perſons who had been quite given over for loſt, have prolonged their Lives by a frequent Uſe of the Bark mixed with other Medicines, not only for many Months but even Years; and notwithſtanding that they continued always infirm and valetudinary, yet being free from the Fever by Virtue of this Drug, they were capable of following their reſpective Employments.

Therefore the *Peruvian* Bark is deſervedly called a febrile Antidote; ſince it may be given with the greateſt Safety in all intermitting, remitting or continual Fevers, to Perſons of either Sex and of all Ages, to Infants and Children, to Adults and old People, to Virgins, pregnant Women, and Women in Childbed. Dr. *Morton* aſſures us, that during the Space of twenty five Years he never obſerved any bad Conſequence proceeding from the Uſe of it, except a ſlight Deafneſs, which always ceaſed either of its own Accord, as ſoon as the Diſeaſe was cured, or upon omitting the Medicine. And this is daily confirmed by our own Experience.

Take of the beſt *Peruvian* Bark reduced to an Alcahol ℥j. of the febrifuge Syrup, the Syrup of Lemons, Quinces, Wormwood, red Poppy, Diacodium, compound Succory, or any other, q. ſ. Mix and make an Electuary of a ſoft Conſiſtence, whereof ʒij. are to be taken every third or fourth Hour, drinking after each Doſe a Draught of Wine and Water, of a pectoral Ptiſan, or any convenient Liquor.

Take of the *Peruvian* Bark powdered ℥ij. ſtrong red Wine ℔ij. Let them be mixed and digeſted together for two or three Days in a cloſe Veſſel, ſhaking it every now and then.

The

The Liquor being ſeparated by Inclination is called the *febrifuge Wine*, and may be given to ℥vj. for a Doſe. If it be deſired ſtronger, ℈j. of the Bark powdered very fine may be added to each Glaſsful, and be drank off with the Wine.

Take of the *Peruvian* Bark ℥j. boil it in ℔ij. of the diſtilled Water of Viper-Graſs or wild Succory to ℥xxviij. The Doſe of the ſtrained Liquor is ℥vj. either alone or mixed with the *febrifuge Wine*.

Take of the *Peruvian* Bark bruiſed ℥j. of the fixt Salt of Nitre ʒſs. boil them in ℔ij. of the Water of Pellitory of the Wall to ℥xxviij. The ſtrained Decoction, which is intenſely red, may be given to ℥vj. when an Evacuation is to be promoted by Urine.

Take of the *Peruvian* Bark in Powder ℥j. Cream of Tartar ℥ſs. Powder of Jalap ℈j. or ʒſs. of the febrifuge Syrup q. ſ. to make an Electuary. The Doſe is from ʒj. to ʒij. to be repeated as neceſſary, in Fevers complicated with a Leucophlegmacy or Dropſy.

Take of the Powder of the *Peruvian* Bark and *Hiera picra* ā ℥ſs. Infuſe them in ℔j. of ſtrong Wine, and let them ſtand in Digeſtion twenty-four Hours; then ſtrain, and keep the Liquor for Uſe. Let a Glaſsful or two be taken in a Fever, when the Humours are to be carried off by Stool.

Take of the *Peruvian* Bark rubbed very fine ℥ſs. depurated Gum Ammmoniac ʒj. Flowers of Benzoine ʒſs. Balſam of Capivi ʒij. of the febrifuge Syrup q. ſ. Make an Electuary. The Doſe is ʒiſs. in a Fever attended with an Infarction of the Lungs.

Take

Take of the *Peruvian* Bark ℥j. boil it in ℔ij. of Spring-Water or any proper diſtilled Water to ℥xxviij. adding towards the End, of the dried Leaves of Ground-Ivy, Bugle, Sanicle, Ladies-Mantle, and Winter-Green ā P. j. In the ſtrained Liquor diſſolve ℥ij. of the Syrup of red Poppy, or Coldsfoot, and make an Apozem to be divided into ſix Doſes, one to be given every fourth Hour, in an intermitting, or continual Fever, when attended with a purulent Spitting.

Take of the *Peruvian* Bark powdered extremely fine ʒiv. *Venice*-Treacle ʒj. the febrifuge Syrup q. ſ. Make a Bolus to be divided into four Doſes, to be taken at the medical Hours, in Fevers attended with malignant Symptoms.

Take of the *Peruvian* Bark in Powder ℥j. Diaphoretick Mineral ʒij. Sal Ammoniac purified ʒj. Syrup of Kermes q. ſ. Make an Electuary, which may be given from ʒiſs. to ʒij. to provoke a *Diaphoreſis*.

Take of the *Peruvian* Bark reduced to an impalpable Powder ℥j. of the martiated Flowers of Sal Ammoniac ℈j. of the febrifuge Syrup q. ſ. Mix them into an Electuary, which may be given from ʒj. to ʒij. four Times a Day in the chlorotick Fever of Virgins, or in other cachectick and ſtubborn Fevers.

Take of the *Peruvian* Bark ℥j. of the aperient Saffron of Iron ℥ſs. compound Powder of *Arum* ʒiij. the febrifuge Syrup q. ſ. Mix and make an Electuary. The Doſe is from ʒj. to ʒij. three or four Times a Day, in a cachectick Fever, Suppreſſion of the *Menſes* and Obſtructions of the Bowels.

Take of the Powder of the *Peruvian* Bark ℥j. *Diaſcordium* ʒij. the febrifuge Syrup q. ſ. Make

Make an Electuary, to be given in the ſame Doſe as the former, in Fevers attended with a Looſeneſs, Gripings of the Belly, and Vomitings.

The Syrup, Tincture and Extract of the *Peruvian* Bark are prepared thus.

The febrifuge Syrup.

Take of the *Peruvian* Bark in Powder ℥ij. and infuſe them in ℔ij. of ſtrong red Wine. Let them ſtand in Digeſtion together for two or three Days, from Time to Time ſhaking the Veſſel. To the Liquor ſeparated by Inclination add ℥ij. of freſh Bark, and digeſt again for two or three Days: Then filter the Infuſion ſeveral Times till it becomes clear. With this make a Syrup, by mixing it with ℔iv. of white Sugar diſſolved in Viper-Graſs Water and boiled to a ſolid Electuary. The Doſe is from ℥j. to ℥ij. and is a very convenient Form for Children, being not unpleaſant to take.

The Tincture.

Take of the *Peruvian* Bark ℥j. *French* Brandy ℥viij. Let them ſtand to digeſt in a cloſe Veſſel for three Days, now and then ſhaking them about, and then ſeparate the Tincture by Inclination. The Doſe is a Spoonful ſeveral Times a Day in a Draught of Wine.

The Extract.

Take of the *Peruvian* Bark ℔j. rectified Spirit of Wine ℔ij. Let them ſtand together in Digeſtion in a gentle Heat, ſhaking them often, till the Tincture acquires an intenſe red Colour.

Then ſeparate the Tincture by Expreſſion, and pour upon the *Reſiduum* ℔iv. of ſtrong Wine, and digeſt in a Sand-Heat for twenty four Hours. Strain again by Expreſſion, and evaporate both Tinctures together in a Sand-Heat to the Conſiſtence of Honey. To this add ʒiij. of the Syrup of Kermes, and mixing them well, evaporate to the Conſiſtence of a ſolid Extract.

As to the Manner in which this Bark exerts its Action, the common Opinion is, that the Cauſe of an intermitting Fever is a coagulating acid Salt, which ſtimulating the nervous Membranes gives Riſe to all the febrile Symptoms; and that the *Peruvian* Bark, abounding with an alkaline Salt, abſorbs this Acid, and deſtroys its bad Effects, by diſſolving the inſpiſſated and coagulated Humours. But this *Hypotheſis* is altogether repugnant to Experience. For, if the Fever were owing to an Acid, it would thence follow that Alkalies, whether fixt or volatile, ſaline or terreſtrial, would be much better and more efficacious Abſorbents of that Acid; and that Acids, on the other Hand, would increaſe the Fever. But the clear contrary falls out: For Alkalies are vaſtly inferior to Acids in the Cure of Fevers. Nay, even the ſtronger Alkalies, ſuch as Salt of Tartar or the volatile Salt of Hartſhorn, or the terreſtrial ones, as Crabs Eyes, *&c.* ſeldom abate the Fever; whereas it is very frequently appeaſed by a few Drops of the Spirit of Vitriol, Sulphur or Nitre, or by the acid Juices of Sorrel, Lemons, *&c.* Beſides, the *Peruvian* Bark contains but a very ſmall Portion of alkaline Salt, either fixt or volatile, but, on the contrary, a large Quantity of acid Salt and Oil. So that it ſeems ſomewhat abſurd to aſcribe its Virtue

tue to a few Grains of an Alkali, which are involved and loaded with an acid Sulphur and Earth.

Some in Oppoſition alledge the Bitterneſs of the Bark, ſuppoſing all bitter Subſtances to be of the alkaline Tribe. But herein they are miſtaken. For, by the Help of Chymiſtry, they may learn that Bitters are not to be ranked among Alkalies; becauſe, in a Reſolution of them into their Principles, a large Quantity either of an acid or neutral Salt is obtained: And thoſe artificial Compounds which are indued with the moſt intenſe Bitterneſs, ſuch as the *Cryſtals of Silver* and the *bitter cathartick Salt*, contain no Portion of an Alkali, but are conſtituted of the ſtronger Acids. To attribute, therefore, the Cauſe of an intermitting Fever and its Symptoms to an acid Juice, and the Virtue of curing it in the Bark to an alkaline Salt, is manifeſtly erroneous.

The Author who beſt has handled this Subject is *Richard Morton*, a learned *Engliſh* Phyſician, and a careful Obſerver of Nature, in his *Treatiſe on Fevers*. He judges the Cauſe of Fevers to be ſome venomous or deleterious Particles contrary to the Principle of Life or animal Spirits, which, deſtroying their expanſive Faculty, neceſſarily extinguiſh the vital Flame; and that the *Peruvian* Bark, after the Manner of Antidotes, ſubdues this febrile Virulency, and obliterates the deleterious Character which is impreſſed upon the Spirits. But this *Hypotheſis* ſuppoſes the Exiſtence of animal Spirits, which many Anatomiſts, and even ſome of the moſt ſkilful, have called in queſtion. Beſides, he no where explains the Manner in which the Febrifuge acts upon the Nerves, imagining ſuch an Inquiry entirely uſeleſs; ſince it would be impoſſible, in his Opinion, to determine any Thing certain in a Matter ſo obſcure. Neverthe-

leſs, if we attend to the evident Cauſes of intermitting, or continual Fevers, and their Symptoms, and likewiſe to what happens to the Patient after taking the Bark, we ſhall be enabled to attain ſome Notions, both of the Nature of the Fevers, and of the Manner in which the Medicine operates: And though theſe Notions as yet may be conjectural, they ſeem, however, to come very near the Truth.

The efficient or proximate Cauſe then of intermitting Fevers is an excrementitious Juice offenſive to the Nerves, wherewith the Blood is overſtocked by Reaſon of the Suppreſſion of ſome ſenſible or inſenſible Evacuation, which has been occaſioned by an Abuſe or Depravation of the ſix Non-naturals; and among theſe a cold and moiſt *Intemperies* of the Air may be reckoned in the firſt Place, being more generally the external or remote Cauſe of ſuch Fevers. The Nature of this Juice ſeems to approach very near to that of an alkaline urinous Salt, ſince almoſt all excrementitious Humours abound with a Salt of that Kind. Wherefore when this Juice is redundant, a large and ſuperfluous Quantity of that Salt muſt be collected in the Blood. And indeed a chymical Analyſis of the Blood of Perſons in Fevers, evinces the Truth of what we have here advanced; for a larger Quantity of an alkaline urinous Salt is obtained thence, than from the Blood of Perſons in Health. However, the noxious Energy of this Humour is not to be imputed to the Quantity of acrid Salts alone, but likewiſe to certain bilious or aduſt ſulphureous Particles, which increaſe or weaken it in Proportion to their Mixture with the Salts.

Now, to diſcover the Force of this ſalino-oleous Humour, the only apparent Method is from the Effects it produces in the Body. For inſtance, being

being ſeparated from the Blood, it falls primarily and immediately upon the nervous Syſtem; And hence ariſe thoſe Symptoms which are perceived in the Beginning of the Fever; to wit, a Coldneſs, Languor, Fainting, Inquietude, Shivering, Stiffneſs, Pandiculation, Giddineſs, Spaſmodick Pains, a weak Pulſe, with Heat, Thirſt, and Dryneſs of the Tongue. In the next Place, its Force is exerted ſecondarily and mediately upon the Humours; for as much as the whole Oeconomy of the Blood is regulated by the due Oſcillations of the nervous Fibres. The oſcillatory Motion of the Nerves being interrupted, there follows a retarded Motion of the Blood and Juices, and the ordinary Secretions are ſuppreſſed. But where the Strength of Conſtitution is ſufficient for ſuſtaining this *Impetus*, the Viſcidity, and ſlow Progreſs, of the Blood in Veſſels occaſion the whole nervous Syſtem to be immediately moved and ſhook, and to recover its Oſcillations with ſo much Vehemence, that in a ſhort Time an univerſal Heat is diffuſed over the Body, the retarded Circulation of the Blood is reſtored, and the Lentor, which had been contracted by its Slowneſs, is diſſolved. By theſe Succuſſions alſo the noxious Humour, which is impacted upon the Nerves, is repelled, and caſt out of the Habit in Sweat, or by ſome other Excretion either ſenſible or inſenſible; or being depoſited on ſome Part of the Body, as the Lips, Noſtrils, *&c.* produces different Sorts of Eruptions, Puſtules, red or purple Spots, or Buboes in the Groin and Armpits; and in other Parts Carbuncles, Boils, Tumours, Abſceſſes, and various Kinds of Ulcers.

The *Peruvian* Bark does not extinguiſh malignant and peſtilential Fevers, or at leaſt not without great Difficulty. But in intermitting and continual Fevers, provided it be properly given, it cures with Speed

Speed and Safety. And this Virtue is owing, partly to its ſtyptick Bitterneſs, and partly to the acid Salts which it contains.

Acid Medicines frequently remove Fevers, by obtunding the Cauſticity of the alkaline or febrile Venom. But the Diſeaſe ſometimes returns, becauſe the due Excretions being not perfectly reſtored, the ſame remote Cauſe is ſtill ſubſiſting.

Bitter Medicines alſo ſometimes ſubdue Fevers; though not ſo much by breaking the cauſtick Salt of the febrile Humour, as by removing the Cauſe of the Fever. We have ſaid, that the internal antecedent Cauſe of the Fever is a Suppreſſion of ſome wonted Excretion, which ariſes from a Laxneſs and Flaccidity of the nervous Fibres compoſing the Emunctories appointed for this Evacuation. Now, bitter Remedies, by their Stypticity, reſtringe the too lax Fibres, and ſo re-eſtabliſh the Excretions, which were either ſuppreſſed or diminiſhed.

In the *Peruvian* Bark the Virtues of both theſe Kinds of Medicines are united: That is to ſay, by Means of the acid Salt wherewith it abounds, it blunts the acrid, cauſtick Salts of the febrile Venom; and thus it conquers the Symptoms in a ſhort Time. Afterwards, by a longer Uſe of it, all the Juices of the Body are imbued with its ſtyptick Bitterneſs, whereby it conſtringes and ſtrengthens the Fibres, which a moiſt Intemperies of the Air, or ſome other Cauſe had relaxed; and ſo it removes the antecedent Cauſe. However, it is not ſurprizing that the Fever ſhould often return upon omitting the Uſe of the Bark too ſoon, eſpecially in a cold and moiſt Conſtitution of the Air, wherein the Fibres are again relaxed by the external Contact of the Air acting continually upon them. If the Uſe of the Febrifuge be continued for a ſuf-

ficient Time, it not only changes the febrile Humour and ſtrengthens the Fibres, but likewiſe, when the noxious Humour is entirely ſubdued, expels it out of the Body through ſome Emunctory or other. Thus, when the Bowels have recovered their Tone, they then begin to perform their Functions. The ſuperfluous Juices which loaded them are excreted, either by Stool, or by Urine, or by Sweat, or by inſenſible Perſpiration; ſo that the Bark often anſwers the Ends of a Cathartick, a Diuretick, a Sudorifick, or a Diaphoretick. That it is unable to correct the Malignity of peſtilential Fevers, or not at leaſt, as we have ſaid, but with great Difficulty, is by Reaſon that the antecedent Cauſe of ſuch Fevers is not a Laxneſs and Flaccidity of the Fibres, as in intermittents, but an Erithiſm or Criſpation of them, which the Bark has not a ſufficient Efficacy to allay. The Medicines indicated in this Caſe are the more powerful Cardiacks; as the finer acid Salts in Combination with oily Particles; in order not only to break the Force of the thick and extremely cauſtick febrile Venom, but alſo to attenuate its more groſs and fixed Salts, and ſo to volatilize them, as it were, that they may more eaſily exhale through the cutaneous Pores; and that the ſolid Fibres, which are ſhook inordinately and with great Violence, may be gently ſtimulated, and at length reduced to an equable Vibration. In this Manner the vitiated or envenomed Juices, being ſubdued and ſeparated from the Blood, will be excreted through the Pores of the Skin, or other Emiſſaries of the Body; or at leaſt, as it ſometimes happens, will be thrown out upon ſome leſs noble Part.

[Beſides the Properties of the *Peruvian* Bark enumerated above, we have ſome Accounts in the

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Medical Eſſays of Edinburgh of its doing Wonders in Gangrenes and Sphacelations, ſeveral Perſons, who were deſpaired of, having recovered perfect Health by taking it, when other Remedies had been tried to no Purpoſe. It is preſcribed to ʒſs. in a Bolus or Decoction, to be taken every fourth Hour, the mortified Part being rubbed with Oil of Turpentine, or other ſuitable Antiſepticks.

A few Years ago another Bark was brought to *Paris* under the Name of *Kina Kina fœmina*, but the Tree to which it belongs is unknown. It was thicker than the genuine Bark and redder, being much of the ſame Colour with *Spaniſh* Snuff, but whiter on the outſide. It ſometimes cured Fevers; yet as it was vaſtly inferior in its Efficacy to the true Sort, and becauſe the Merchants had found out the Trick of mixing them, the Importation of it is now prohibited by Law.]

A third *Species* of the *Peruvian* Bark is called *Kina Kina aromatica*, *Caſcarilla*, *Schacarilla*, *Cortex Peruvianus griſeus*, *Zagarilla*: *Cortex Eleuterii*, *Joann. Andreæ Stiſſeri*: *China China falſa et Cortex Eleterii*, *Dale Pharm. Eleutheria*, *Lin. Hort. Cliff.* 486. and in *Engliſh* is termed *Caſcaril.* It is a Bark convoluted into Tubes, as broad as one's Finger or Thumb, and two, three, or four Inches long, a Line or two thick, outwardly of a whitiſh aſhy Colour, and within like the Ruſt of Iron; of a bitter aromatick Taſte, and very fragrant aromatick Smell, when it is burnt, ſomething like the Smell of Amber. It comes to us from ſome of the ſouthern Parts of *America*, particularly from *Paraguay*.

The firſt who made Mention of this Bark was *J. And. Stiſſerus*, Doctor of Phyſick and Profeſſor in the Univerſity of *Juliers*; who in his *Specimen Actor. laboratorii chymici anno 2do.* publiſhed at

Helmſtat 1693. relates, that he had ſome of it given him by a Perſon of Diſtinction, at that Time juſt returned from *England*, who told him that it was then the Cuſtom in *England* to mix it with Tobacco, in order to render it more agreeable for ſmoking. He likewiſe tells us, that a while after he procured ſome of the ſame Bark from *John de Breyn*, a wealthy Merchant of *Amſterdam* and an ingenious Virtuoſo: But all he could learn from him in Regard of its Qualities, was, that being mixed and ſmoked with Tobacco, it corrected in ſome Meaſure the Diſagreeableneſs of its Smell; and that if it were put in too large a Proportion with the Tobacco, it occaſioned Drunkenneſs. Some Years afterwards, the Merchants ſold it in the publick Markets in *Brunſwick* for the *Peruvian* Bark; and ſo it became known in *Germany* as a Febrifuge.

The Tree which bears this Bark is hitherto a Stranger to us.

Moreover, *Stiſſerus* ſeems to be the firſt who brought it into Uſe. He ſpeaks of it thus. "Though "the *Cortex Eleuterii* (ſays he) have no extraor- "dinary antifebrile Virtue, its Uſe is not therefore "to be wholly rejected, ſince it is replete with "reſinous and balſamick Particles which are not "unfriendly to our Bodies."

He prepared a Tincture of it with Salt of Tartar and Spirit of Wine, which he uſed with Succeſs in the Stone, Aſthma, Conſumption, Scurvy, Gout and other Affections, and found by Experience that it poſſeſſed a carminative and diuretick Virtue.

He likewiſe prepared another Tincture with the volatile Salt of Hartſhorn and Spirit of Wine, which was nothing inferior to the former, though of a leſs ſaturated Colour. He preſcribed both theſe Tinctures to gut. xx. or xxx. to be taken in a Morning

Morning on an empty Stomach, or an Hour before Meals, in warm Tea or Coffee; and Perſons afflicted with the Gout, Scurvy, and calculous Affections found Benefit from them.

They who took the Tincture prepared with Salt of Tartar, dropt into Wine or Beer whilſt they were at Dinner, or immediately after, were ſenſible of a ſlight Kind of Drunkenneſs from it, though without any further Inconvenience.

J. Ludovicus Apinus, a Phyſician of *Herſpruch*, greatly extols this Bark, as poſſeſſing an antifebrile cardiack and alexipharmack Virtue, in an hiſtorical Account, which he publiſhed at *Nurenburg* in the Year 1697 of an epidemical Fever which reigned in the Years 1694 and 1695, at *Herſpruch*, a Town in the Territory of *Nurenburg*, and in the neighbouring Country, and at length was changed into a ſpotted Fever.

This epidemical Fever (the Cauſe whereof he ſuppoſes to have been the frequent Rains, which falling in great Abundance in the Month of *Auguſt* in the Year 1694 continued to the *December* following) was at firſt of a milder Diſpoſition, putting on the Type of a tertian intermitting Fever, or a double tertian; and attacked only Children, pregnant Women, and the poorer Sort of People. But in the Beginning of the Year 1695, he tells us this epidemical Contagion increaſed, and Spots made their Appearance in the Skin. Theſe he aſcribes to a Change in the *Temperies* of the Air, and to a chilling Froſt which unexpectedly came on; whereby the Perſpiration was ſuddenly obſtructed, and the ſerous Humours inſpiſſated. In the Summer, when the Heat of the Sun was more intenſe, this ſpotted Fever ſeemed to have withdrawn itſelf, a Dyſentery ſucceeding in its Place: But the Heat being ſomewhat abated, it ſhewed

itſelf again under the ſame Form; though was not ſo rife as before: And at length, an eaſtern Wind blowing in Autumn, it entirely diſappeared.

At firſt he attempted to ſubdue theſe intermitting Fevers by giving Alexipharmacks and Sudorificks, having previouſly purged the Stomach and Inteſtines both upwards and downwards: But finding the febrile Ferment too ſtubborn for theſe Medicines, he mixed with them a proper Quantity of Caſcaril, either in Powder or Extract; and diſcovered, from a ſucceſsful Experience, that it had a ſovereign Efficacy in conquering the Fevers and all their Symptoms. He likewiſe aſſerts, that with the ſame Medicine in larger Doſes, he ſometimes cured even the ſpotted Fevers, and procured Relief in the Dyſenteries which ſucceeded them.

He gave ʒj. of Caſcaril for a Doſe, to be repeated twice, and ſometimes thrice or four Times in a Day, and it often provoked a ſalutary Sweat. He prepared an Extract of it with Water, which he greatly extols for ſubduing theſe Fevers, and therefore gave it the Name of *Specificum Lexipyretum* (ἀπὸ τῦ λήγειν τὺς πυρετὺς) from its putting an End to Fevers.

His uſual Method of giving his Extract was this. Having ordered a Vomit, when neceſſary, in the next Place he gave this Bark in Subſtance; or omitting the Bark, he gave five or ſix Grains, more or leſs, of the Extract in Pills, or diſſolved in Liquors, repeating it every ſixth Hour; or at leaſt, in ſlighter Caſes, Morning and Evening. This Method was ſeldom continued above three Days, but the Diſeaſe was evidently changed for the better. Many were cured by the ſecond or third Doſe; or were ſo far advanced that Nature herſelf might eaſily perform the reſt, all the grievous and direful Symptoms being removed. Moſt who

who took the Bark, either in Subſtance or Extract, ſweated plentifully without Inconvenience or Loſs of Strength. Beſides this manifeſt Operation by Sweat, the Belly was preſerved free and open; and where the Patient was difficult to ſweat, it ſometimes operated three or four Times by Stool (*cum Euphoria*) without Irkſomneſs, in the ſame Manner as if a gentle Cathartick had been given. In Women it reſtored the menſtrual Diſcharges which had been ſuppreſſed in the Beginning of the Fever, as alſo the hæmorrhoidal Flux when it was obſtructed.

In *Germany* this Bark is oftentimes uſed for the true *Peruvian* Bark. The Phyſicians aſcribe to it a reſolvent, and ſomewhat diaphoretick, tonic, and lenient Virtue. Theſe Qualities ariſe from its conſtituent Principles; which are not only ſulphureous, vaporous and ſubtile, but alſo reſinous, terreſtrial and ſomewhat aſtringent, as is demonſtrable from its Smell, Taſte, and chymical *Analyſis*.

The celebrated *Stahl*, in particular, tells us, that he has found this Bark to be an excellent Medicine in Diſtempers of the Breaſt, wherein it has a lenient, diſcutient, and calming Property: That in a Peripneumony, Pleuriſy, and eſpecially in a Diarrhœa attending acute Fevers, and a Dyſentery, it more effectually mitigates (as he is pleaſed to ſpeak) than any other Remedy whatſoever.

[In the Beginning he preſcribed the Tincture of Caſcaril, mixed with that of *Pimpinella alba*, from gutt. xxx. to xl. but in the Increaſe and State he ordered the compound reſolving Powder which follows, to be taken Morning and Evening from ℈ſs. to ℈j. and about the Decline he gave the Bark itſelf reduced to a fine Powder; but the Doſe of this was leſs (*viz.*) from gr. x. to xv. and not ſo often repeated.

The compound reſolving Powder of *Stahl.*

Take of the reſolving Powder, made of equal Parts of Shells prepared without Fire, diaphoretick Antimony and depurated Nitre, ℥iſs. Extract of Caſcaril made with Water ℥ſs. Mix and make a Powder.

The Powder of Caſcaril with the balſamick Pills is likewiſe commended in the inflammatory Fever of the Inteſtines which ariſes from the Meſentery, or dyſenterick Affections.]

J. Junker, a Phyſician of *Halle*, in his *Conſpectus Therapeiæ generalis*, ſays, that the Virtue of Caſcaril, ſo much extolled by *Apinus* in malignant and contagious Fevers, anſwers not the Expectations of the Phyſician. He aſſures us that he has given it to greater Advantage in intermitting Fevers, which it often cures ſucceſsfully when mixed with other ſuitable Medicines; and that herein it is ſometimes preferable to the *Peruvian* Bark, which being powerfully aſtringent, may be prejudicial in many Caſes, if not given with Caution.

We ſhall here take the Liberty to obſerve in paſſing, that the ſpotted Fevers, in which *Apinus* gave this Bark with ſo much Succeſs, though malignant, were yet of the Tribe of Intermittents, as Tertians, double Tertians, *&c.* which, we have obſerved after *Morton*, this Bark ſpecificially cures, provided it be not given too late. Wherefore thoſe malignant Fevers in which it is proper, are carefully to be diſtinguiſhed from thoſe wherein it is uſeleſs. Now we conclude from the Obſervations of *Apinus* and *Junker*, that it is proper in all intermitting Fevers, whether malignant or not, but rarely in other continual malignant and contagious Fevers.

Junker

Junker moreover asserts, that this Bark is good in all Inflammations, except the Quinsey, where it is somewhat too acrid; that it is of Service also in Pains, hypochondriack and hysterick Spasms, Excess of the menstrual and hæmorrhoidal Fluxes, internal Hæmorrhages, Vomiting of Blood, Flooding, and Spitting of Blood; likewise in an *Hemicrania*, Debility of the Stomach remaining after Diseases, excessive Vomiting, all Fluxes of the Belly and others. And though it does not always produce its Effect immediately, yet by its tonic and gently anodyne Quality it affords some Relief to the Patient, and is safer, at least, and more convenient than Opiates.

In Regard of its Use, we need only be cautious to give it in a convenient Time and proper Method; and not to be over liberal in the Quantity, because it is heating.

When Cascaril is burnt it emits a Fume of a pleasant Smell, though disagreeing with many Persons, being observed to affect the Head.

As to the rest, the *Germans* use it in Powder, Tincture, Extract, and Infusion. The Powder is prescribed in these Affections from gr. vj. to ℈ss. or ℈j. the Infusion from ʒss. to ʒj. in a proper Liquor, the Tincture prepared with Spirit of Wine, from gut. x. to xx. and the Extract from gr. iij. to vj. or viij.

Michael Albertus, Professor of Physick at *Halle*, in his *Introduction to Physick*, gives the same Account of this Bark. He likewise adds, that it has no such specifick Virtue in curing epidemical Fevers, as *Apinus* ascribes to it; but that it is of some Service, after due Evacuations, in subduing the milder intermitting Fevers.

CHAP.

CHAP. III.

Of WOODS.

ARTIC. I. *Of* RHODIAN WOOD.

LIGNUM Rhodium, Off. This is a yellowiſh pale coloured Wood, with Age turning reddiſh, thick, hard, ſolid, tortuous, marked with fat and reſinous Knots, and ſmelling like Roſes. It is called *Rhodian Wood* from its native Soil, being formerly brought from the Iſland of *Rhodes*; and ſometimes *Roſe-Wood*, from its agreeable Scent of Roſes. It is alſo termed *Cyprian Wood*, becauſe it is got in the Iſland of *Cyrus*. Some ſuppoſe it to be the *Aſpalathus* of the Ancients; but it is evident, from the Deſcriptions which *Dioſcorides* and *Galen* have given of *Aſpalathus*, that we have no ſuch Drug at this Time in the Shops.

What Tree this Wood is produced from, in *Rhodes* and *Cyprus*, is quite uncertain. *Matthiolus* and *Anguillara* will have it to be a *Species* of wild Olive. But *Honorius Belli* contradicts them, affirming it to be the *Cytiſus verus* of *Marantha*, that is, the *Cytiſus incanus ſiliquâ falcatâ*, C. B. which however is improbable, becauſe it has no pleaſant Smell.

Paul Herman, in his manuſcript Treatiſe, tells us it is the Root of a *Cytiſus* which grows in the *Canaries*, but gives no Deſcription of the Plant. And indeed *Rhodian* Wood is imported from the *Canaries*; as alſo from the *Antilles*, and ſome oriental Countries; and is got from certain Trees which grow there.

A *Species* of *Rhodian* Wood is alſo found in *Jamaica*, and the learned Naturaliſt Sir *Hans Sloane* has

has deſcribed the Tree thus, *Lauro affinis, Terebinthi folio alato, ligno odorato, candido, flore albo, Catal. Pl. Jam.* It grows in rocky and mountainous Woods. The Inhabitants take it for *Rhodian* Wood; and it ſmells pretty much like it, though upon a curious Examination is found to differ. The Smoke of it when burning is extremely fragrant and agreeable.

The *Dutch* draw a very ſweet ſcented eſſential Oil from *Rhodian* Wood by Diſtillation, which is often uſed for the eſſential Oil of Roſes, in apoplectick, cephalick and cardiack Balſams. A Virtue of fortifying the Heart and Brain is attributed both to the Wood and its eſſential Oil.

ARTIC. II. *Of* GUAIACUM.

Guaiacum Off. Lignum ſanctum, Lignum Indicum, Lignum Vitæ, et Palus ſanctus, Quorumd. This is a ſolid, denſe, ponderous, and reſinous Wood; whereof the internal Part, which is called the *Matrix*, Pith, or Heart, is of a blackiſh green Colour, or variegated with pale, green, brown, and black. The external Part, which is the *Alburnum*, or Sap, is of a Colour like Box or a pale Yellow, with a bitteriſh and ſomewhat aromatick Taſte, affecting the Palate and Jaws with a gentle Acrimony, and of a fragrant, agreeable Smell, when it is heated or burnt. This is covered with a woody, thin, denſe, ſhining, ſmooth, and ſomewhat reſinous Bark, compoſed, as it were, of many very fine *Lamellæ* or Scales, of an aſhy colour on the outſide, inclining to green, or black, or diverſified with Spots more or leſs green, which are intermingled with a livid or leaden Colour, and pale within; having an acrid, bitter, and diſagreeable Taſte.

Guaiacum

Guaiacum was formerly in the Shops distinguished into many Kinds. *L. Oviedo* calls one Kind *Guaiacum vulgare*, and another *Lignum sanctum*. *Caspar. Bauhine* reckons three Kinds. 1. *Guaiacum magnâ matrice*, C. B. P. *Guaiacan*, *Lignum Indicum ex Insulâ S. Dominici*, *Monard.* 2. *Guaiacum propemodùm sine matrice*. C. B. P. *Guaiacan genus alterum, quod lignum sanctum, illo præstantius, et ex insulâ S. Joannis de portu divite affertur, quo maxime utuntur, Monard.* Of this many *Species* have been taken Notice of, which differ in nothing but Colour, Size, and Weight, being all taken from the same Tree; only that the Wood is whiter the younger the Tree is, becoming darker and heavier as the Tree grows old. 3. *Guaiacum foliis Lentisci*, C. B. P. *Clusius*, in his Notes upon *Monardus*, has given the Figure of a Branch of this last with the Flowers and Fruit upon it. But these several Trees seem to make one *Genus* only, which we may distinguish indeed into many *Species* from the Diversity of their Fruit; but whatever Difference besides may be observed, it will be found too trivial to constitute a distinct *Genus*. At least Father *Plumier*, *De novis plantarum Americanarum generibus*, makes one *Genus* of Guaiacum and no more, which he defines thus. It is (says he) a Kind of Plant (or rather Tree) with a Flower like a Rose, that is, consisting of many *Petala* standing in a round Compass. From the *Calyx* arises a Pistil, which changes afterwards into a fleshy, roundish Fruit, containing a Stone or Stones of an oval Figure, and covered with a soft Pulp. He reckons two *Species* of it, which he describes in his *manuscript History of American Plants*.

1. *Guaiacum flore cæruleo, fructu subrotundo, Plum. nov. gen.* 39. *Guaiacum tetraphyllum fructu singulari, Ejusdem hist. MS.* 86. *Pruno vel Evonymo affinis arbor*,

bor, folio alato, buxeo, ſubrotundo; flore pentepetalo, cæruleo, racemoſo, fructu aceris cordato: cujus cortex luteus, corrugatus, ſemen unicum, majuſculum, nigricans, nullo oſſiculo tectum, operit. Sloane Cat. pl. Jamaic. It grows in almoſt all the *Antilles*, particularly in *Dominica* and *Santo Cruz*.

2. *Guaiacum flore cæruleo fimbriato, fructu tetragono, Plum. nov. pl. Amer. gen.* 39. *Guaiacum polyphyllum fructu ſingulari, tetragono ejuſdem hiſt. MSS.* 87. *Hoaxacan, ſeu lignum ſanctum, Hernandez.* This is found common enough in *Dominica*. The Wood and Bark of theſe Trees are uſed in Phyſick; as alſo the Reſin which flows from Inciſions made in their Trunks. The Wood is beſt when freſh, heavy, and reſinous, with a conſiderable Mixture of Black in its Colour, having the Bark adhering cloſely to it; and when it eaſily takes Flame, and ſome Part of it melts with the Fire into a reſinous Maſs. But when it is of a pale Colour, dry, or too much deprived of its Juice, carious, and inſipid, it is bad. The Bark ought to be choſen reſinous, hard, and cleaving firmly to the Wood. The Reſin which in the Shops is improperly called *Gum Guaiacum*, is of a brown Colour on the outſide, and tranſparent within, ſometimes reddiſh and ſometimes greeniſh, brittle, of an acrid Taſte, and when it is burnt of an agreeable reſinous Smell, pretty much like the Wood.

In a chymical *Analyſis*, five Pounds of the reſinous and blackiſh Wood of Guaiacum reduced to a kind of Saw-duſt, yielded twenty eight Ounces and four Drachms of Phlegm, both acid and alkaline; whereof the firſt four Ounces ſeven Drachms and a Half having the Taſte and Smell of the Wood, diſcovered Marks of a mere alkaline urinous Salt, foraſmuch as they made the Solutions of Salt of Lead and corroſive Sublimate

foul and milky. The next five Ounces and two Drachms having a ſharper Taſte, beſides an alkaline Salt which they diſcovered upon Trial, contained an Acid alſo, which they manifeſted by turning the blue Tincture of Turnſole to a reddiſh Colour. The laſt eighteen Ounces, two Drachms and a Half became more and more acid, and at length gave a fiery Colour to the Tincture of Turnſole; yet all along diſcovered an alkaline Salt, by precipitating the Solution of corroſive Sublimate. With theſe Liquors came over nine Ounces, ſix Drachms and a Half of blackiſh Oil of a thick Conſiſtence like Syrup, and heavier than Water; and four Drachms of thinner Oil, which was of a yellow Colour and floated upon Water. The black Maſs remaining in the Retort weighed thirty three Ounces and ſeven Drachms; ſo that ſeven Ounces, ſix Drachms and a Half were inſenſibly loſt in Diſtillation.

The black Subſtance remaining behind, which we may call the Coal of Guaiacum, being calcined in an open Fire for twelve Hours, that is, till it had given over ſmoking and was reduced to white Aſhes, weighed two Ounces, ſix Drachms and twelve Grains. From theſe Aſhes, by Lixiviation, was obtained a fixt Salt, which was not merely alkaline, but neutral; for being put into the Solution of corroſive Sublimate, a white Powder ſubſided to the Bottom. The Quantity of this Salt was one Drachm and ſixty two Grains. Wherefore thirty two Ounces and ſixty Grains went off in Fume.

It is very remarkable, that in this *Analyſis*, not much more than half the Principles, of which Guaiacum is compoſed, were drawn off; and that the other Part of them, conſiſting of a thick Oil, and an aluminous or vitriolick acid Salt, were ſo condenſated, that the ſtrongeſt Fire was unable to raiſe them

them in close Vessels; nor could they be separated from the Earth by any Means, but an open reverberatory Fire, continued for twelve Hours; whereby, at length, they were dissipated in Smoke and Flame.

Moreover, it is worth observing, that this Coal of Guaiacum, being taken out of the Retort and exposed to the Air, even two or three Days after the Process, takes Fire immediately of its own Accord; provided that, when the Distillation is over, the Neck of the Retort be carefully stopped, and the Vessels and Furnace be left to cool of themselves.

The distilled Oil of Guaiacum is so greatly condensated by the Acid in Combination with it, that it is easily converted into an earthy, black, insipid Mass, and becomes entirely fixt. For eight Ounces and six Drachms of the black Oil, being distilled from a Glass-Retort, gave over seven Ounces, two Drachms and a Half of a thinner and more fluid Oil, which was so replete with an acid Spirit, that it turned the Tincture of Turnsole to a deep red or fiery Colour; but contained nothing of an alkaline Salt, as appeared by its producing no Change in the Solution of corrosive Sublimate. In the Retort was left a black hard Mass, of a rare Texture, or spongious like a Pumice-Stone, weighing one Ounce, two Drachms, forty eight Grains, whereof ten Drachms, being exposed to a very strong Fire in a Crucible, continued flaming for two Hours and a Half; and at last, after a Calcination for four Hours, two Drachms of a dense, hard, insipid, and blackish *Caput mortuum*, were left in the Crucible.

The Oil of Guaiacum, when newly distilled and heavy, being mixed with an equal Quantity of the rectified Spirit of Nitre, falls immediately

into an Efferveſcence, riſes up in the Veſſel, and takes Flame. When the Deflagration is ended, a certain fungous, rare, light, ſhining, and inſipid Subſtance remains, which is afterwards incapable of Alteration by any Means whatever. Now in both theſe Operations, the Oil and acid Salt are converted into an Earth, or an inſipid, ponderous, and brittle Subſtance; whether it be, that thoſe terreſtrial Parts were pre-exiſting in the Oil and Salt, or otherwiſe have been newly produced from the Oil and Salt in the Operation.

We may conclude from this *Analyſis*, that the Wood of Guaiacum conſiſts of an acid vitriolick Salt, an Oil and Earth, cloſely combined together under the Form of a denſer kind of Reſin, ſo as not to be ſeparated, but with the greateſt Difficulty: And that it contains, beſides, a certain ammoniacal Salt, which being leſs intimately joined with the other Principles, gives up its volatile urinous Part in the Beginning of Diſtillation.

The Sap or whiter Wood, which encompaſſes the brown middle Part of Guaiacum, is much the lighter, and leſs fit for medicinal Purpoſes, as is evident from its *Analyſis*. For five Pounds of this ſappy Part, in Diſtillation, afforded thirty one Ounces, two Drachms and eighteen Grains of Phlegm, both acid and urinous; with ſix Ounces, ſix Drachms and a Half of thick, and heavy Oil. The black Maſs remaining weighed twenty three Ounces, three Drachms and a Half; and the Loſs of Parts, which evaporated into the Air, was eighteen Ounces, three Drachms and fifty four Grains. Wherefore, in this Subſtance, the Principles are not ſo cloſely united as in the middle Part of the Wood; for as much as in that, the Loſs in Diſtillation was eight Ounces leſs. Laſtly, the black Maſs that remained in the Retort, being perfectly calcined, left

left one Ounce, three Drachms and forty six Grains of white Aſhes; from which were got, by a Lixiviation, two Drachms and two Grains of fixt Salt, which was not purely alkaline, but neutral. The Bark of Guaiacum in like Manner, by a chymical Treatment, is found to be very different from the Wood, as well in its conſtituent Principles, as in the Mixture of them: For five Pounds of the Bark yielded in Diſtillation twenty four Ounces, one Drachm and thirty two Grains of Phlegm, both urinous and acid; yet ſo, that the firſt Portions of it diſcovered Marks of a weaker Acid, and ſeemed to be loaded with a much larger Quantity of alkaline urinous Salt, than the Liquor drawn from the Wood. Afterwards came over eight Ounces, three Drachms and forty four Grains of thick and heavy Oil; a black Maſs, weighing twenty nine Ounces, four Drachms and fifty four Grains, remaining in the Bottom of the Retort. This, being calcined for eleven Hours in a reverberatory Fire, left thirteen Ounces, ſix Drachms and ſixty Grains of white Aſhes, which contained ſeven Ounces and twelve Grains of mere alkaline fixt Salt.

From theſe *Analyſes* it is evident, that in the Bark is a larger Quantity of alkaline Salt, both urinous and fixt, than in the Wood; as alſo that it contains more of a fixt Earth or Aſhes, but leſs Oil and acid Salt. Beſides, it appears that their acid Salts are of a different Nature; ſince That in the Wood is formed into a fixt neutral Salt, and That in the Bark concretes into a Salt purely alkaline. So that upon the whole we may conclude, that the Virtues of the Wood and the Bark are different, and ought not to be indiſcriminately made uſe of; which is confirmed by the Practice and Experience of the beſt Phyſicians.

Guaiacum incides, attenuates, and deterges thick and viſcid Humours, opens Obſtructions, provokes Sweat and Urine, helps Spitting, and ſtrengthens the Stomach when too much relaxed, as likewiſe all the other Bowels. It removes long and inveterate Obſtructions of the Liver and Spleen, and cures the Jaundice, Dropſy, and other Diſorders ariſing from them. It diſſipates and conſumes ſuperfluous cold Humours in all Parts of the Body; reſtrains Diſtillations from the Head, and appeaſes rheumatick Pains thence proceeding; being further wonderfully ſerviceable in the Gout of the Foot, Hand, or Hip, and in all other Appearances of the Diſeaſe; as likewiſe in Aſthmas, Palſies, Stupors, and all Reſolutions and other Affections of the Nerves whatever. It brings hard cold Tumours to Suppuration, and ſtops, dries, and cicatrizes malignant and *chironian* Ulcers. Moreover, it is much celebrated for its Efficacy in curing the venereal Diſeaſe, being ſaid to remove the Puſtules, Tubercles, Ulcers, Pains, and other Symptoms, without the leaſt Detriment to the Body, or Loſs of Strength. This its antivenereal Virtue was firſt diſcovered in *America*, after many Remedies had been tried for that Diſeaſe in *Europe* to no Effect. It happened that a certain *Spaniard* living in *Hiſpaniola*, was grievouſly afflicted with the venereal Diſeaſe, from an impure Commerce with an *American Woman*. In his Houſe was a Native of *America*, who practiſed Phyſick in that Province, and who gave him a Decoction of the Wood of *Guaiacan* (as they call it) to drink; whereby he was relieved of his Pains, and quite cured of the Infection. Upon this many other *Spaniards*, who had received the ſame Taint, had recourſe to the ſame Remedy, and with equal Succeſs. Afterwards, many of them returning to *Spain*, ſpread abroad

its Reputation there; from whence it became known to the reſt of the World, and was much uſed in all Places, till the ſovereign Efficacy of Quickſilver was diſcovered; After which, by Degrees, it grew more and more out of uſe. Yet we muſt allow, that in hot Climates it is able to conquer the Diſeaſe, provided that the Cure be conducted in a proper Manner; but in a cold Air, where the Perſpiration is more ſparing, and harder to be promoted, it cannot be ſafely depended on without the Aſſiſtance of Mercurials.

Some aſſert that the Bark hath the ſame Virtues with the Wood, or even greater; though others, as *C. Hoffman*, *Matthiolus*, and *Fallopius*, ſuppoſe it to be much inferior. *Fernelius*, however, aſcribes to it a more powerful Energy in attenuating, drying, and provoking Sweat; but reckons it over heating, and very prejudicial in a febrile State of the Blood, or an hot and dry *Intemperies* of the Liver. And indeed what *Fernelius* had diſcovered, as well by its being of a more acrid and bitter Taſte than the Wood, as by long Experience, ſeems to be proved from its *Analyſis*; ſince the Bark, as we have ſaid, contains a much larger Proportion of ſubtile Parts, that is, of alkaline Salts, both volatile and fixt.

To cure the Venereal Diſeaſe, when this Remedy was relied upon for that Purpoſe, they took ℥xij. of the Filings of the Wood, and ℥ij. of the Bark well bruiſed; though by ſome the Bark was omitted. Theſe being macerated for the Space of a Day in ℔vj. of Spring-Water, were afterwards boiled over a gentle Fire to a Diminution of Half the Liquor, or ſometimes of three Fourths; which having ſtood to cool, was ſtrained, and kept in a cloſe Veſſel for Uſe. This Decoction ſome called the Cream of Guaiacum, and others *Serapium*. Upon

the Remainder were poured ℔viij. of freſh Water, and boiled to ℔iv. for a ſmall Decoction. The Patient being duly prepared by purging, or likewiſe bleeding, was ſhut up in a warm Chamber, not expoſed either to Cold or Wind, during the whole Courſe of the Cure, and took a Glaſsful of the ſtronger Decoction twice a Day, Morning and Evening. After each Draught he was put to Bed, and well covered with Clothes to ſweat; where he was ſuffered to lie as long as his Strength would bear; and then was taken out and rubbed over with warm linen Cloths. Twice a Day, about three or four Hours after taking the Medicine, he was permitted to eat, and his Diet was ſmall and thin, being only what might barely ſuffice for his Support. Some Phyſicians injoined an entire Abſtinence from Fleſh, allowing only two Ounces of Biſcuit with Currants or Raiſins. Others allowed the Uſe of young Pigeons, Chickens, and ſuch like tender Animals; but this Indulgence was very ſparingly complied with. The Patient's common Drink was the ſmaller Decoction abovementioned, and Wine, by ſome, was abſolutely forbid him, as highly noxious; yet by others it was preſcribed to be medicated with the Decoction. The Belly was all along preſerved in a lax State; and a ſtrong Cathartick alſo was given every ſeventh Day. This Method was continued for twenty or thirty Days, or longer, until the venereal Poiſon was radically deſtroyed. When the Pains and all other Symptoms of the Infection were removed, the ſtronger Decoction was omitted, but the Patient ſtill continued to uſe the ſmaller for forty Days more, returning by little and little to his uſual Diet.

But at this Time the Method above laid down is no longer in uſe, becauſe that of treating the Diſeaſe with

with Quickſilver and its Preparations is much more certain: So that Guaiacum is now only preſcribed in ſweating, diaphoretick and drying Decoctions and Ptiſans, for Catarrhs, Defluxions, Palſies, Obſtructions of the Bowels, and during and after mercurial Courſes for the Venereal Diſeaſe. It is given in Decoction from ʒij. to ℥ſs. or ℥j. joined with other ſuitable Medicines, and ſometimes with Catharticks; but is very ſeldom preſcribed in Subſtance. The Doſe of the Reſin is from gr. viij. to ϑij.

Take of the Shavings of Guaiacum-Wood ℥iij. of the Bark ℥j. Spring-Water ℔vj. let them ſtand to macerate for 24 Hours, and then boil to a Conſumption of Half. The Doſe of the ſtrained Decoction is three, four, or five Glaſsfuls a Day, in the Venereal Diſeaſe, Rheumatiſm, and Palſy.

Take of the Wood of Guaiacum ℥iv. of the Bark and Saſſafras ā ℥ſs. Aloes-Wood ʒij. Liquorice-Root ſhaved and bruiſed ʒj. Coriander-Seed ʒiſs. Macerate theſe Ingredients for 24 Hours in ℔vij. of Fountain-Water, and then boil to Half, adding towards the End ℥ſs. of Raiſins. When the Decoction is cold ſtrain it for uſe.

Take of the Filings of Guaiacum ℥iv. Common Water ℔iv. Let them be macerated together a Day, and afterwards boiling to a Diminution of half the Liquor, add towards the End, of picked Sena ℥j. Turbith and Hermodactyls ā ʒij. The Doſe is ℔ſs. in the Morning faſting, in a Palſy and Rheumatiſm.

From Guaiacum are prepared a Tincture, reſinous Extract, Spirit, and Oil. The Tincture

and Extract are prepared after the following Manner.

Take of fine Filings of Guaiacum q. v. Put them into a Matrafs, and pour upon them the pureft rectified Spirit of Wine to the Height of three or four Fingers Breadth above the Wood. Let them digeft in a gentle Sand-Heat for eight Days and Nights; after which the red Tincture may be carefully feparated and put by for Ufe: Or being diftilled with a flow Fire to the Confiftence of a thick Extract, and then evaporated to Dryneſs in a Water-Bath, or the Heat of the Sun, the Mafs remaining will be a refinous Extract.

This Tincture and Extract are accounted diaphoretick and fudorifick. The Tincture is prefcribed to ʒj. and the Extract from gr. iv. to ʒij.

The Spirit and fœtid Oil are prepared thus.

Take of the Filings of Guaiacum q. v. Put them into a Retort, to which let a large Receiver be fitted, and then diftil in a reverberatory Furnace, beginning with a flow Fire and increafing it gradually to the higheft Degree of Heat, till no more Drops and Clouds come over into the Receiver. When the Veffels are cool remove the Receiver, and carefully feparate the thick and black Oil from the Spirit: This Spirit is of a red Colour, but being diftilled a fecond Time from a Glafs-Alembick, is obtained limpid, purified of its Oil, and of a fubacid Taſte; yet after ftanding a few Weeks it becomes red again, from a latent Sulphur which is ſtill contained in it.

The

The thick, black and fœtid Oil, is either diſſolved in Spirit of Wine and filtred through Cap-Paper, and ſo put by; or is mixed with a triple Quantity of common Salt calcined and powdered, and being diſtilled from a Glaſs-Retort in a Sand-Heat, comes over more fluid, red and leſs fœtid, and ſo is preſerved for Uſe.

Another eſſential Oil, which is tranſparent and not fœtid, is drawn from Guaiacum thus.

Take of the Shavings of Guaiacum ℔iv. Sea-Salt ℔j. common Water ℔xxiv. Let them macerate together in a cloſe Veſſel for two or three Months. Afterwards diſtil with a ſtrong Fire in an Alembick with a Refrigeratory; and thus will be drawn off a turbid Water loaded with an eſſential Oil, which gradually ſubſides to the Bottom. When the Water is quite clear, decant it, and the yellow, odorous, pellucid Oil, remaining in the Bottom of the Veſſel, is called the eſſential Oil of Guaiacum.

Take Ethiops Mineral and prepared Wood-lice ā ʒiv. the diſtilled Oils of Amber and Guaiacum ā ʒſs. Gum Ammoniack reduced to Powder ʒj. Mix, and with q. ſ. of any proper Syrup, make an Electuary for cancerous Tumours.

The Spirit of Guaiacum provokes Sweat and Urine. It is given from ʒj. to ʒſs. in a Decoction of the Wood, againſt Catarrhs, rheumatick Pains, and Palſies: Sometimes alſo it is joined with Sudorificks and Alexipharmacks, and is commended in peſtilential and malignant Fevers.

The black Oil is ſeldom given inwardly, by Reaſon of its fœtid Smell. Externally applied it

powerfully diſcuſſes, reſolves, and attenuates; is commended for deterging Ulcers, eſpecially ſuch as are venereal, for reſolving Tumours, conſuming fungous Fleſh, forwarding the Exfoliation of Bones, and ſtopping their *Caries*; and it appeaſes the Aching of a rotten Tooth by deſtroying the Nerve. By ſome it is given inwardly, diluted with Spirit of Wine and tempered with Sudorificks, from gut. ij. to xv. or xx. to provoke Sweat: But the eſſential yellow Oil is much leſs diſagreeable to take, and no leſs efficacious for purifying the Blood of noxious Humours, which it expels by inſenſible Perſpiration or Sweat. It is alſo commended by ſome in the Venereal Diſeaſe, to be taken every Day for ſome Weeks from gut. iv. to xij. in a Decoction of Guaiacum, or its diſtilled Water; but Quickſilver, as we have ſaid, is here far preferable.

Laſtly, ſome Phyſicians extol a Decoction of Guaiacum in the *Fluor albus* by Way of Injection.

ARTIC. III. *Of* SANDERS.

It is generally believed that the ſeveral *Species* of this Wood were Strangers both to the ancient *Greeks* and *Latins*. The *Arabians* firſt made Mention of them under the Name of *Sandal*; and the later *Greeks*, who followed the Footſteps of the *Arabians*, have alſo mentioned them. Nevertheleſs *Salmaſius*, in his *Exercitationes Plinianæ*, ſuppoſes the *Sagalina ligna*, which the Author of the *Periplus* or *Voyage round the World* ſpeaks of, to be Sanders, and therefore not unknown to the *Greeks*: But as *Dioſcorides* and *Galen* are quite ſilent about them, we may conclude that they were at that Time never, or at leaſt very rarely uſed in Phyſick. At preſent we meet with three Sorts of Wood

in

in the Shops under this Name, which are diſtinguiſhed by their Colour into citrine or yellow Sanders, white Sanders, and red *.

1. *Santalum flavum vel citrinum*, *Off.* *Santalum pallidum*, C. B. P. *Santalum flavum*, *Tabern*: *Santalum citrinum*, J. B. Citrine or yellow Sanders is a ponderous, ſolid Wood with a ſtraight Grain, or parallel Fibres, whence it may be eaſily cloven into even Planks. It is of a reddiſh pale or yellowiſh Colour, and ſomewhat inclining to that of a Citron; of an aromatick bitteriſh Taſte, yet filling the Mouth with a ſweetiſh Acrimony; and a fragrant Smell, ſomething like Muſk and Roſes.

2. *Santalum album*, *Off.* *Santalum album*, C. B. P. *Lignum odoratum candidum*, *Cæſalp.* White Sanders differs from the former in Colour and a fainter Smell; otherwiſe has the ſame Subſtance and Texture.

Garcias ab Horto tells us there is ſo great a Reſemblance between the Trees producing the citrine and white Sanders, that they can hardly be diſtinguiſhed, except by the Inhabitants perhaps who ſell them to the Merchants. But the learned Botaniſt *P. Herman* aſſerts that both are produced from the ſame Tree, the *Alburnum* or Sap being called white Sanders, and the medullary or interior Part being the yellow.

The Name of the Tree is *Sarcanda*. It is about the Bigneſs of a Walnut-Tree, and grows in the *Eaſt Indies*, particularly in the Kingdom of *Siam*, and the Iſlands of *Timor* and *Solor*.

According to *Bontius*, they who go to theſe Iſlands to fell Sanders-Trees, are ſeized with a par-

* Red Sanders is now the only Sort referred to in Preſcription: But to explain the Virtues of this, it is here neceſſary to give an Account of the *citrine* and *white*, my Author's Method of treating them rendering it unavoidable.

ticular

ticular Kind of ardent and continual putrid Fever, attended with Deliriouſneſs and a ſurprizing Perturbation of Mind. For during the Exacerbation, which is uſually four Hours, the Sick commonly perform very ridiculous Actions, being for the moſt Part ſuch as are exerted in their ordinary Employments when in Health. And beſides, in the *Delirium*, they have a canine Appetite, greedily devouring whatever Filthineſs is offered to them. Among the Cauſes of this Fever he reckons principally the Smell of theſe Trees, when newly cut down; from which, and eſpecially from their Bark, certain *Effluvia* are emitted, which have ſomething in them deleterious and offenſive to the Brain.

3. *Santalum rubrum*, *Offic.* *Santalum rubrum*, C. B. P. Red Sanders is a ſolid, denſe, heavy Wood, with Fibres in ſome Places ſtreight, in others tortuous, reſembling the Veſtiges of Knots. It is the Heart of a Tree brought over to us in large Blocks, ſeparated from the cortical and exterior woody Parts, of a dark reddiſh, and, as it were, blackiſh Colour on the outſide, and of a deep Red within; having no ſenſible Smell, but in Taſte is a little aſtringent and auſtere.

The Tree from which it is got is called *Pentaga*. I have met with no Deſcription of it in any Author, except that *Herman* ſays it bears Pods. It grows in *Coromandel*, a Country of the *Eaſt Indies*.

In the Shops inſtead of red Sanders are often ſubſtituted two Sorts of Wood, which are imported from the *Indies*, and from *America*. The one is called *Ligno Braſiliano ſimile*, *ſeu Lignum ſapou lanis tingendis percommodum*, C. B. P. and the other is the *Lignum Braſilium*, J. B. Yet it is eaſily diſtinguiſhable from them both in Colour and Taſte:

Taſte: For red Sanders is of a ſanguine or dark red Colour, and ſubauſtere Taſte; and theſe have a ſweetiſh Taſte, and their Red diluted with a Caſt of Yellow.

The three *Species* of Sanders contain an eſſential acid Salt, a thick Oil which ſinks in Water, a ſmall Portion of volatile Salt, and a large Quantity of Earth. In the yellow Sort the Oil is thinner and more copious, not ſo thin in the white, and thicker in the red, wherein is a larger Proportion of Earth, as is ſufficiently evident from their Taſte and Smell.

In Regard of their Virtues Authors are divided, ſome ranking them among cooling Medicines, others among ſuch as are heating. Indeed from their *Analyſis* it is manifeſt, that ſome fine and active Parts are included in their Compoſition: Wherefore *C. Hoffman* not unjuſtly blames Phyſicians who give them with an Intention of cooling. They are then more truly accounted inciding, attenuating, aſtringent, and ſtrengthening; theſe Operations being variouſly exerted according to the Difference of Circumſtances, which we have before obſerved in many other Medicines. The citrine Sanders more powerfully incides, the white much more weakly, and the red aſtringes more powerfully than either. Phyſicians generally aſcribe to all three a Virtue of comforting the Heart, reſolving Obſtructions of the Liver, and reſtoring or augmenting the Tone of the Bowels.

Riverius commends the Decoction of Sanders as a moſt efficacious Remedy, not only in a beginning Conſumption, but alſo in ſaline Defluxions, particularly when the Humour is thin; and in inveterate Fluxes of Blood proceeding from its Incaleſcence he aſſerts they do Wonders. The Decoction of Sanders is prepared as that of Guaiacum,

acum, both the primary and ſecondary, and is given in the ſame Manner. The Doſe of citrine Sanders in Subſtance is from ℈j. to ʒj. of the red to ʒij. and in Decoction to ℥ſs.

Take citrine and red Sanders ā ℥ij. Macerate for 24 Hours in ℔ij. of Water; then boil to a Conſumption of a third Part, and let the ſtrained Apozem be uſed for common Drink.

Take of the Shavings of red Sanders ℥j. Boil in ℔ij. of clear Water to Half. To the ſtrained Liquor add ℥ij. of the Syrup of Pomegranates, and make an Apozem for Hemorrhages and Obſtructions of the Liver.

Red Sanders is ſometimes applied to the Head in the Form of an Epithem to allay Pain in ardent Fevers.

Take of red Sanders in Powder ℥j. Crums of Bread ℥ſs. Vinegar of Roſes q. ſ. to make a Cataplaſm or Epithem; to which add ℥ſs. of camphorated Spirits of Wine, and apply it to the Forehead.

ARTIC. IV. *Of* SASSAFRAS.

Saſſafras, *Off. Saſſafras*, *ſive Lignum Pavanum*, J. B. This Wood is of a pale reddiſh brown Colour, of a rare Texture and light, with a fungous Bark of an aſhy Colour on the outſide, and ferruginous within. It has an acrid, ſweetiſh, aromatick Taſte, and fragrant Smell, not much unlike that of Fennel. It comes to us from *Virginia*, *Braſile*, and other Provinces of *America*. It is choſen freſh and well ſcented. The Bark by ſome

is preferred to the Wood, as being more fragrant. Sometimes it is adulterated with the *Lignum anisatum, seu Lignum Anisi*, J. B. Which it is easy to distinguish from Saſſafras, as well by its smelling like Aniseed, as by its heavy, resinous and dense Substance.

Saſſafras is the Wood of a large Tree of the Bigness and Figure of a Pine, which is called *Saſſafras Arbor ex Florida, ficulneo folio*, C. B. P. *Laurus foliis integris et trilobis*, *Lin. H. Cliff.* 54. *Cornus mas odorata folio trifido, margine plano, Saſſafras dicta. Pluken. Alm.* p. 120. *Tab.* 222. *Fig.* 6. *Cateſby Hiſt. Tom.* 1. p. 55. T. 55. *Anhuiba ſive Saſſafras major*, *Piſon.*

Piſo likewiſe deſcribes two other *Species* of this Tree. The one he diſtinguiſhes *Anhuypitanga Braſilienſibus*; the other *Anhuiba miri.*

In a chymical *Analyſis* of five Pounds of Saſſafras were obtained ten Drachms of fragrant eſſential Oil, which was tranſparent, of a yellowiſh Colour, and heavier than Water; ſeven Ounces of thicker Oil, of an empyreumatick Scent, and reddiſh Colour; about thirty two Ounces of acid Spirit, with two Ounces and five Drachms of urinous Spirit. In the Retort was left a black Maſs reduced to a Coal, weighing twenty three Ounces and one Drachm. Whilſt this was calcining, if it were but ſlightly ſtirred with a Spattle, it immediately flew off in Sparks of Fire. The white Aſhes remaining after Calcination weighed ſeven Drachms and forty Grains; from which were got by Lixiviation forty two Grains of fixt neutral Salt. The Loſs of Parts in Diſtillation was fourteen Ounces; in Calcination, twenty two Ounces and two Drachms; in the whole, thirty ſix Ounces and two Drachms. Whence it appears, that beſides the active ſenſible Parts of this Wood, there are ſtill

others

others leſs ſenſible contained in it, which make their Eſcape in the Proceſs. Now the Virtues of this Compound almoſt wholly depend upon extremely fine, volatile, and (as they are termed) eſſential oily Parts, united with a ſubtile, rare and expanded Acid.

It provokes a *Diaphoreſis*, Sweat, and Urine; incides and reſolves thick and viſcid Humours, opens Obſtructions of the Bowels, and is good in a Cachexy, Green-Sickneſs, and Dropſy. It aſſwages arthritick Pains, cures cold catarrhous Affections, and is ſerviceable in the Palſy and Venereal Diſeaſe. The Doſe in Powder is ʒj. however it is ſeldom preſcribed in Subſtance, but oftener in Decoction or Infuſion from ʒſs. to ℥ij. It is of common Uſe in ſudorifick and drying Decoctions.

Take of the Wood of Saſſafras with the Bark reduced to a groſs Powder ʒj. Let it infuſe a Night in ℔j. of ſtrong white Wine, and give a Glaſsful of the ſtrained Liquor now and then in a Catarrh, and all cold Defluxions.

Take of Saſſafras cut ſmall ℥ij. Infuſe in ℔iiſs. of clear Water for twelve Hours, and boil to ℔ij. Strain, and let a Glaſsful be taken at the medical Hours.

Take Saſſafras, Guaiacum and Sarſaparil, ā ℥iſs. Let them macerate a Night in ℔iv. of Spring-Water; then boil to ℔iij. and ſtrain. Let the Patient drink three Glaſsfuls a Day in the Palſy, Catarrh, or Venereal Diſeaſe.

An eſſential Oil is drawn from Saſſafras, which is tranſparent, of a fragrant Smell, ſomething like Fennel, and ſubſides in Water. It is procured by macerating the Shavings of the Wood with the Bark in a large Quantity of Water, and then committing

mitting them together to the Still. It promotes Sweat, and is given from gut. iij. to xx. One Part of this Oil being mixed with two Parts of the Spirit of Nitre, a vehement Effervescence immediately ensues, and the Mixture takes Flame; and when the Flame is extinguished a resinous Substance is left in the Vessel.

CHAP. IV.

Of MARINE PLANTS *(viz.) of the different Sorts of* CORAL.

CORALLUM et Coralium, Off. Κοράλιον, *Theoph.* Κοράλλιον *et* Λιθόδενδρον, *Dioscor. Curalium et Gorgonia, Plin.* Coral is a marine Plant, growing under the Water, without Leaves, almost like Stone, divided into Branches, dense, solid, brittle, and covered with a Bark, or rather a Kind of tartarous Crust, which however is soft. Its Colour is various, one Sort being of a Blood-Colour, another fleshy, and others yellow, brown, white or variegated. In the Shops two Sorts only are made use of *(viz.)* the red and the white.

Corallum rubrum, Off. Corallum rubrum, C. B. P. 366. Red Coral is found in the *Mediterranean*, in the Bay of *France*, about the Shores of *Provence*, from the *Cape of Couronne* to that of *Saint Tropez*, in the Bay of *Spain*, about the Islands of *Majorca* and *Minorca*, on the southern Shore of *Sicily*, on the Coast of *Africa*, in the *Mediterranean* near the *French* Fortress commonly called *le Bastion de France*, and about *Negro Cape* in the *Ethiopick* Ocean. The Urinators, who are continually employed in fishing for Coral, give out that it is found only

only in Caverns whoſe Situation is parallel to the Surface of the Earth, and which open towards the South; and that it grows no where but upon the Roofs of theſe Caverns, and always with its Branches downwards. But a convincing Argument to the contrary is, that Branches of Coral are ſometimes found upon Pitchers, Sculls, Pieces of Wood, Iron, Shells, and Things of the like Nature; for theſe always ſubſiding to the Bottom of the Sea, the Coral adhering to them muſt neceſſarily grow upwards.

The Urinators in *Provence*, in fiſhing for Coral, make uſe of two Machines. The one, which is commonly employed for getting the Coral from craggy Rocks, is a large wooden Croſs, with a heavy Ball of Lead fixed to the Centre to make it ſink. This is ſuſtained by a long Rope, and a Net of an orbicular Form is hung to each of the Arms or Extremities of the Croſs. This Croſs being let down into the Water, when the Urinators have diſcovered a Cavern well ſtocked with Coral, the Perſon to whom the Care of directing the Machine is committed, puſhes an Arm or two of the Croſs into the Cavern, and ſo the Coral, being entangled in the Nets, is broken off and drawn out of the Water by Perſons who ſtand in Boats.

The other Machine, whereby Coral is got from the deepeſt Caverns, is a long Beam, to the End of which an Iron-Circle is fixed a Foot and Half in Diameter, bearing a reticular Sack, with two ſuch Nets as thoſe abovementioned, on each Side one. This Beam is connected to the Prow and Stern of a Boat by two long Ropes, and being ſunk in the Water by a Ball of Lead, is directed and impelled under Caverns by the Motion of the Boat. The Coral-Branches, growing on the Roofs of the Caverns, are ſcraped off by the Circle of Iron,

Iron, and others are drawn up entangled in the Nets. Sometimes, though very ſeldom, they meet with Branches which weigh three or four Pounds.

Some doubt whether Coral ought to be numbered among Plants, or not. But it grows as Plants, and receives Nouriſhment. It alſo bears Flowers and Seed, or a certain ſeminal Subſtance, at leaſt, by which it is propagated. No one will doubt its Vegetation, who ſhall duly conſider the different Growths of Corals. Stones and Fragments of Rocks from the Bottom of the Sea are obſerved to be covered with Points or Coral-Buds, ſmall Branches two or three Lines in Length, and others ſome Inches; ſo that we have no Room to doubt, but theſe Buds would increaſe in their Growth to Lines and Inches, or even to ſome Feet in Proceſs of Time.

Paul Boccone has long ſince obſerved a nutritious milky Juice included in diſtinct Cells under the Bark. As to the Flowers, the illuſtrious *Aloyſius Ferdinand Count de Marſigli* has given an accurate Deſcription of them, in the Supplement to the *French Ephimerides* for the Year 1707, and moreover has compoſed a complete Hiſtory of Coral, in his *Natural Hiſtory of Submarine Subſtances*, which has not yet been publiſhed.

Therefore red Coral is a marine Plant conſiſting of a twofold Subſtance. The one, or the interior, is denſe, ſtony, without viſible Pores, or Fibres, ſtriated or marked along its Surface with ſmall Furrows, of a deep red Colour, and void of Taſte and Smell. The exterior is ſofter, fungous, reſembling a Bark, and whilſt it is under the Water, full of an acrid milky Juice, of a greeniſh or yellowiſh Colour, or yellow with a Caſt of red. The Trunk is divided into a great Number of Branches. It has neither Leaf nor Root; but adheres to

Rocks, Stones or other Bodies by a broad thin *Baſis*, formed by an Expanſion of its ſtony Subſtance. The Bark, which covers the *Baſis*, Trunk and Branches, when the Coral is newly taken out of the Water, is eaſily ſeparated from the interior Part, but with greater Difficulty when it is dry. Externally it is uneven, rough, and beſtrewed as it were with Grains, which are perforated in the Middle by a ſmall Aperture, to receive the nutritious Juice from the Water that ſurrounds it. Moreover, from the Surface of the Bark ariſe *Papillæ* or ſmall Glands diſtributed here and there, hollow within and divided in many Cells, which have an Orifice opening at the Top of the *Papillæ*, ſometimes oblong, ſometimes round, but more frequently divided into ſix Chinks, ſo as to exhibit the Form of a Star. The internal Surface of the Bark is ſtriated or marked lengthways with Furrows, which correſponding to thoſe on the Surface of the ſtony Subſtance, when they are applied upon each other conſtitute Canals, through which the nutritious Juice is diffuſed over the whole Plant. In the ſtony Subſtance likewiſe are diſcovered Cells, containing a Juice like the *Papillæ* of the Bark. Whilſt the Plant is growing in the Water, its Canals, *Papillæ* and Cells are turgid with a viſcous milky Juice, of an acrid and ſomewhat aſtringent Taſte, approaching to the Taſte of Pepper and Cheſnut. When it has been expoſed for ſome Time to the Air, this Juice is inſpiſſated, dried and converted into a yellowiſh friable Subſtance, void of Acrimony, having only a gentle Aſtringency.

At the Tops of the Branches are ſoft Tubercles compoſed of the cortical Subſtance, diſtinguiſhed into different Cells, and replete with the ſame milky Juice. They are ſoft, like the Bark, when firſt

firſt taken out of the Sea, but by Degrees become dry and friable in the Air. Theſe Tubercles are regarded by many as the Fruit or Receptacles of the Seed; but they rather ſeem to be Organs appointed by Nature to prepare and perfect the nutritious Juice.

The Flowers are contained in the *Papillæ* of the Bark. When Coral, freſh out of the Sea, is kept in Sea-Water in a Place moderately warm, they gradually ſwell and are expanded, and a Drop or two of a milky Juice exudes from them. Afterwards a white *Calyx* ariſes from each of them a Line and Half long, bearing eight white Leaves diſpoſed in Rays, and repreſenting a kind of Star. At length, after eight, ten or twelve Days, the Flowers, as they wither, turn yellow, and are contracted into ſmall Globes full of a milky Juice; which falling off from the Bark, ſink to the Bottom of the Water. The *Count de Marſigli* ſuſpects that theſe round Corpuſcles are the Fruit, and that the Seed is concealed in their Juice.

This ſagacious Naturaliſt firſt obſerved theſe Flowers in the Month of *December* in the Year 1706, in ſome Coral which was freſh got out of the Sea near *Marſeilles*; for letting it ſtand for ſome Hours in a Veſſel filled with Sea-Water, he diſcovered white ſtellated Flowers ſcattered here and there upon it. The Water being taken away, the Flowers diſappeared, red *Papillæ* only remaining: But a new Supply of Water being added, the Flowers appeared again; and thus for ten or eleven Days they continued viſible.

Coral is found at almoſt all Times in Flower in the Sea: At leaſt, the *Count de Marſigli* has found it full of Flowers in Winter, in Spring, and in Autumn. The Ancients have told us, that Coral as long as it continues in the Sea is ſoft, and im-

mediately upon coming to the Air grows hard like a Stone. But this is a Miſtake; for it is equally hard whether it be within or out of the Sea. Indeed the Bark, as long as the Coral is in the Water, is ſofter, and by lying in the Air to dry becomes ſomething harder, though never ſo hard as Stone.

The Liquor wherewith the Canals, papillary Protuberances, and Cells of the Bark are filled, when the Coral is firſt got out of the Ocean, is milky and glutinous, of an acrid Taſte with ſome Aſtringency, approaching, as we have ſaid, to the Taſte of Pepper and Cheſnut; which is very perceptible in freſh Coral, but as the Liquor dries the pipperine Taſte is loſt, the Aſtringency only remaining. The Liquor, after being about ſix Hours in the Air, turns yellow, is inſpiſſated, and at length changes into an hard and friable Subſtance of a Saffron Colour. It is the Juice which is ſubſervient to the Nutrition and Increaſe of the Plant. What is contained in the round *Capſulæ* of the Flowers ſeems to be impregnated with the Germ of Coral, and may paſs for its Fruit or Seed; inaſmuch as theſe *Capſulæ*, when they fall off from the Branches, adhering to Rocks, Shells or other Bodies upon which they light, are by little and little expanded and germinate, and produce a new Coral-Plant.

The ſtony Subſtance of Coral is not inert, nor deſtitute of active Principles; much leſs the Bark. In ſhort, Coral, when freſh out of the Sea, is indued with active and volatile Principles, of which it is deprived by being kept long in the Air. The Bark contains ſtill a larger Proportion of theſe Principles, as appears by its *Analyſis*.

From three Ounces of the Bark of Coral, freſh and replete with milky Juice, were obtained in Diſtillation five Drachms and thirty Grains of Phlegm,

Phlegm, which was almoſt inſipid; nine Drachms of urinous Spirit, mixed with a ſmall Portion of thick and bituminous Oil. The Maſs remaining in the Retort weighed one Ounce; which being calcined for three Hours, afforded twenty five Grains of fixt Salt. The Loſs of volatile Parts, both in Diſtillation and Calcination, was one Drachm and thirty Grains.

Three Ounces of Coral, freſh and cleared of its Bark, yielded eighteen Grains of whitiſh Phlegm, and forty eight Grains of urinous Spirit, with a little bituminous Oil. The Weight of the *Reſiduum* was two Ounces; from which were got, by Lixiviation, thirty five Grains of fixt Salt. The Loſs in Diſtillation and Calcination was about thirty five Grains.

From three Ounces of Coral, taken out of the Sea a Year and Half before, came over thirty Grains of urinous Phlegm mingled with bituminous Oil. The *Reſiduum* weighed two Ounces, ſeven Drachms and thirty Grains; from which, after Calcination, were obtained twenty five Grains of fixt neutral Salt. The Loſs in the Operation was thirty ſix Grains.

The urinous Spirit turned the Syrup of Violets green, fermented with acid Liquors, and changed the Solution of corroſive Sublimate into a milky *Coagulum*. The fixt Salt, extracted from the *Caput mortuum*, occaſioned a white *Coagulum* in the Solution of corroſive Sublimate. Whence it appears that this fixt Salt is not purely alkaline, but ſaline.

Red Coral being calcined in an open Fire loſes its Redneſs, and becomes of a pale Colour, or white. It likewiſe turns white by being macerated a long Time and boiled in certain Oils, as Oil of Aniſe, Fennel, Citron, *&c.* and the *Menſtrua* receive a red Colour: But no ſuch Change is effected by boiling it in aqueous Liquors.

We may conclude from these *Analyses*, that Coral is not merely terrestrial and absorbent, but that it contains a volatile urinous Salt and bituminous Oil mixed with some Earth, whereupon its Virtues depend; and that its Redness is owing to the bituminous Oil, which it is possible to separate from the Earth. Further, it appears that fresh Coral is considerably different from that which has been long kept; and that the Bark, perhaps, has more Energy than the other Part, which ought to be inquired into by Experiments.

Dioscorides ascribes to Coral an astringent Virtue, and says it cools moderately, restrains Excrescences, deterges Scars of the Eyes, fills hollow Ulcers and Chaps, stops Fluxes of Blood and cures Difficulty of Urine. These Virtues are not owing to an earthy, absorbent and drying Principle only, but also to its bituminous and balsamick Oil. It is prescribed to Advantage in all Hemorrhages, Loosenesses and the *Fluor albus*. The Dose is from ℈j. to ʒj. Moreover, it is said to fortify the Heart, and to resist Poisons and Malignity of the Humours, not only when taken inwardly, but likewise being hung externally upon the Body. But we are not sufficiently assured of this Property.

Many Preparations of Coral are given in medicinal Writers, as the Magistery, Salt, Tincture and Syrup, which at this Time are almost universally rejected. It is now chiefly used in Powder, being ground upon Porphyry to an *Alcohol*, and then is called *prepared Coral*. And this Preparation is preferable to the rest; for the Coral is so much altered in the others, that it differs entirely from itself. Thus, the Magistery is a Solution of Coral in acid Liquors precipitated by Alkalines. The Salt is not a real Salt of Coral, but Crystals arising from an acid Salt united with it by Dissolution

and

and Evaporation: And the Syrup is an acid Solution thereof boiled with Sugar to a due Conſiſtence. As to the Tincture, in the ſeveral Ways it is generally directed, it does not receive its Colour and Virtue ſo much from the Coral, as from the *Menſtruum* and the other Ingredients mixed with it. However, if a true Tincture of Coral be required, it may be made thus.

Take of red Coral q. v. Boil it in q. ſ. of the eſſential Oil of Aniſe or Fennel for ſix or ſeven Hours in a cloſe Veſſel, till the Pieces of Coral grow white and the Oil is tinged with a red Colour. Separate the Oil from the Coral, and diſtil it with a gentle Fire till the Drops begin to come over red. Then upon the reſinous Maſs remaining in the Retort pour Oil of Tartar *per deliquium* to the Height of two or three Fingers, and let them digeſt together till the Reſin is entirely diſſolved. Evaporate this Solution to Dryneſs: Then pour upon the ſaline reſinous Maſs rectified Spirit of Wine to the Height of three or four Fingers above it. Digeſt in an Aſh-Heat, and ſeparate the Tincture. Pour upon it again freſh Spirit of Wine and digeſt as before; repeating theſe Affuſions and Digeſtions as long as the *Reſiduum* communicates any Colour to the Spirit. Mix all the Tinctures, and evaporate to Half. The remaining Liquor is a true Tincture of Coral; yet its Effects will not anſwer the Promiſes of Empiricks. It contains the ſulphureous and bituminous Part of the Coral.

Corallum album, Offic. Corallum album, Lobel. Icon. 253. White Coral only differs from the red in Colour. It is rarely found in our Seas; and moſt

Authors who have told us that it grows in the *Mediterranean*, have miſtaken for it a *Species* of *Madrepora*. The *Count de Marſigli*, in the many Times he was preſent at the Coral-Fiſhery, met with no white Coral. In ſhort, as Branches are found partly white and partly red, may we not ſuppoſe that all Coral is naturally of a red Colour, and that it never appears of any other, but when it is ſomehow vitiated, or becoming dry and deſtitute of its Juice with Age turns white? Which, however, I ſhall not poſitively aſſert, before a ſufficient Number of Obſervations have confirmed the Truth. Nevertheleſs, the *Count de Marſigli* is of the ſame Opinion in Regard of brown Coral, as alſo of the yellowiſh or aſh-coloured, which he ſuppoſes to be nothing but broken Coral Plants depoſited a long Time in the Mud at the Bottom of the Sea. White Coral is not mentioned either by *Dioſcorides* or *Galen*; whence it ſeems to have been a Stranger to them.

It has the ſame Virtues aſcribed to it as red Coral, but weaker. They are frequently preſcribed together.

It is doubtful whether any true black Coral is to be met with, (*viz.*) Coral with a ſtony, denſe, hard Subſtance, and a black ſhining Colour, like black Marble. At leaſt, I could never find ſuch either in the Shops, or among Lapidaries; what is there given out for it, being nothing but Trunks or Branches of a marine Plant, which is called *Lithophyton nigrum, arboreum, Inſt.* R. H. 574. *Corallum nigrum*, C. B. P. 366. *Corallum nigrum, ſive Antipathes*, J. B. 3. 804. the Subſtance of which is like Horn, denſe, hard, not eaſily broken, and covered with a Bark which is fibrous and ſometimes reſembing Tartar. It is eaſily diſtinguiſhed from Coral, becauſe it burns in the Fire like Horn, and

and ſmells like it, which Coral does not. It yields a large Quantity of volatile Salt in Diſtillation, but is ſeldom or never uſed in the Shops.

We often find in the Shops under the Name of white Coral ſome *Species* of *Madrepora*, which are marine Plants of a ſtony Subſtance, white, divided into Branches, much like Coral, yet differing from it as they are full of Perforations, hollow within, and grow without a Bark. The *Species* of this Plant which oftenеſt occurs in the Shops, is the *Madrepora vulgaris*, *Inſt.* R. H. 573. *Corallium album oculatum officinarum*, J. B. 3. 805. When it is taken out of the Sea it ſeems full of a glutinous milky Juice. Some attribute to it the ſame Virtues as to white Coral.

CHAP. V.

Of STALKS, LEAVES *and* FLOWERS.

ARTIC. I. *Of* SCOENANTH.

Cænanthus et Squinanthum, *Off.* Σχοῖνος, *Dioſcor. et Gal.* Σχοῖνος ἡδύοσμος, ἢ ἔνοσμος, ἢ ἐνώδης, *Hippoc.* Σχοῖνος ἀρωματικὸς, ἢ μυρεψικὸς, *Græcor. recent.* Σχοίνανθος, *Actuar. Juncus odoratus*, *Plin. Juncus rotundus*, *C. Celſ. Adher ſeu Adcher*, *Arab. Palea de Mechâ*, *Paſtus et Fœnum Camelorum*, *quorumd.* This is a dry, rigid, cylindrical, ſhining, geniculated Graſs * brought from *Arabia*, with the Leaves and ſometimes the Flowers upon it, about a Foot long, full of a fungous Pith, of a pale Colour towards the

* Though it is commonly called a Ruſh, yet it is not one, but a *Species* of Graſs, whoſe Leaves grow thick together, incloſing or incompaſſing one another, having a ſmall fibrous Root; they are long and narrow, *&c.* *Miller. Botan. Offic.*

Root,

Root, or yellowiſh, and green or purpliſh near the Top; having an hot, ſubacrid, bitteriſh, and pleaſant aromatick Taſte, like Pennyroyal, but much ſtronger, and a very fragrant Smell, between Penny-royal and Roſes. Many Blades of it ſpring up from one Root.

Some Writers on the *Materia Medica* diſpute whether our Scœnanth be the ſame with the *Juncus odoratus* of the Ancients; but this *Matthiolus* and the two *Bauhines* have clearly demonſtrated. *Dioſcorides* and *Galen* called it σχοῖνος or *Juncus* ſimply, by Way of Eminence. *Celſus*, lib. iii. c. 21. mentions it by the Name of *Juncus rotundus* or the round Ruſh, to diſtinguiſh it from the *Juncus quadratus* or ſquare Ruſh, which the *Greeks* called *Cyperus*. It was anciently named among the *Greeks* σχοινῦ ἄνθος (*viz.*) *Junci flos*, which *Galen*, in his Notes upon the *Theriaca*, admires at, becauſe no Flowers were then brought with it. Whence he concludes, that the old *Greeks*, by this Appellation, meant the Plant itſelf and not its Flower. They might ſo term it, perhaps, on Account of its Excellency above other Ruſhes; for the Word ἄνθος denotes not only a Flower, but, as *Salmaſius* obſerves, ſomething excellent. Nevertheleſs, it is ſurprizing that *Galen* ſhould aſſert he never ſaw the Flowers of this Plant, or that in his Time none were brought with it; when *Dioſcorides*, among the Marks whereby he directs the Choice of it, requires that it ſhould have Flowers; and at preſent the Blades frequently come to us with Flowers upon them.

The Plant is called *Schœnanthos ſive juncus odoratus*, J. B. T. 2. 515. *Juncus rotundus aromaticus*, C. B. *Th. Botan.* 163. *Gramen Dactylon aromaticum multiplici paniculâ, Spicis brevibus tomento candicantibus ex eodem pediculo binis, Pluk. Phytograph.* T. 191. Fig. 1.

Fig. 1. It grows in ſuch Plenty in ſome Parts of *Arabia*, that it is the common Fodder for Camels.

Formerly all the Parts of Scœnanth were employed in Phyſick (*viz.*) the Blade, Flower and Root, *Dioſcorides* having made Mention of them. Some commend only the Leaves, aſſerting that they are preferable to the Flowers: But all the Parts are odoriferous, and not void of Efficacy. The Leaves vellicate the Tongue with a pleaſant aromatick Acrimony. The Root has an hot aromatick Taſte. The freſh Flowers alſo are gently aromatick; but being kept a Year they have no longer this Quality, and after two years are quite uſeleſs. Moreover, to theſe Parts are aſcribed different Properties. The Root is more aſtringent than the Flower, and the Flower, as conſiſting of more ſubtile Parts, is hotter than the Leaf. Therefore Scœnanth ought to be made Choice of for medicinal Compoſitions, freſh, with Flowers upon it, odoriferous, aromatick, and hot upon the Tongue.

It abounds with an eſſential aromatick Oil, which is obtained by Diſtillation; but it is ſeldom uſed in the Shops.

Dioſcorides and *Galen* attribute to Scœnanth a Virtue of provoking Urine and the *Menſes*, and of curing Inflations of the Liver, Stomach and Belly, being either applied by Way of Fomentation, or drank in Decoction. Among the Moderns it is chiefly uſed againſt Obſtructions of the Bowels, particularly of the Womb, Liver, and Spleen; as alſo in the Hickup, Vomiting, Difficulty of Urine, and Inflation of the Stomach, The Doſe in Powder is ʒj. and in Decoction in Wine or Water to ʒij. Externally, included in Sacks, or boiled in Lotions, it ſtrengthens the Head, Stomach, and the other Bowels. *Simon Paulli* relates, that *Meibomius* gave Scœnanth, mixed with the Root of *Cyperus*, as a Specifick in Ulcers of the Bladder.

ARTIC.

ARTIC. II. *Of the* INDIAN LEAF.

Malabathrum et Folium Indum, Off. Μαλάβαθρου *et* φύλλου. Μαλαβάθρα, *Dioſc. et Gal.* Μαλάβαθρου Ἰνδικὸν, *ejuſdem Gal.* φύλλου Ἰνδικὸν, *Actuar. Malabathrum, Plin. Sadegi, Avicen. Tamalapatra, Garz.* This Leaf is like that of the Cinnamon-Tree, from which it only differs in Taſte and Smell, being oblong, pointed, denſe and ſmooth, with three Nerves running its whole Length from the Pedicle to the Point, and of a pleaſant aromatick Smell, ſomething like Cloves.

It ought to be choſen freſh, of a thick firm Texture, large and entire, and not eaſy to be broken into Bits.

Concerning the *Malabathrum* of the Ancients Authors are of different Opinions, nor can we be abſolutely certain that our *Indian* Leaf is the ſame. *Dioſcorides* tells us *Malabathrum* floats upon Waters like the *Lens paluſtris*, without Root; but he has either tranſmitted Fables to us from Hearſay, or we are now entirely unacquainted with the Plant he ſpeaks of. *Pliny* aſſerts that it is the Leaf of Nard, which Notion *Dioſcorides* had already rejected. *Garcias*, among the various Sentiments upon this Head, infers from the Similitude of Names, that the *Indian* Leaf of the Moderns and *Malabathrum* of the Ancients are one and the ſame Thing: For by the *Indians* it is called *Tamalapatra*; whence he ſuppoſes Μαλάβαθρου is derived. And we are of his Opinion.

The Tree which bears it is the *Canella Sylveſtris Malabarica, Raii Hiſt.* 1562. *Katou-Karua, Hort. Malab.* P. 5. 105. *Canella arbor Sylveſtris, Muntingii: Tamalapatrum ſive Folium*, C. B. P. 409. It grows in the mountainous Parts of *Malabar*.

The

The *Malabathrum* of *Dioſcorides* has the ſame Virtues with Nard, but in all Intentions is reckoned more efficacious. It is now ſeldom uſed in Phyſick, except in *Venice* Treacle and Mithridate.

ARTIC. III. *Of* SENA.

Senna, *Sena*, *et Folium orientale*, *Off.* Σένα, *Actuar. Sene*, *Arab. Abalſemer Perſarum.* Under theſe Names in the Shops we meet with ſmall, dry, fattiſh Leaves, of a firm Texture, and pointed ſomething like a Lance, having a green Colour with a Caſt of yellow, a faint Smell, though not altogether unpleaſant, and a ſubacrid, bitteriſh, nauſeous Taſte.

Two Sorts are uſually brought to us. 1. *Senna Alexandrina ſeu Zeidenſis*, *aut Sidonia*, *Alexandrian* or *Sidonian* Sena. 2. *Senna Tripolitana*, Sena of *Tripoli*, which is much inferior. The Leaves are broader than the others, of a pleaſant green Colour, ending obtuſely, and rough to the Touch. Beſides theſe, we ſometimes have the *Senna Mochana*, Sena of *Mocha*, whoſe Leaves are narrower, longer and ſharper; and likewiſe the *Senna Italica* or *Italian* Sena, which is diſtinguiſhed from the true Sort by the Largeneſs and Broadneſs of its Leaves, which are alſo roundiſh at the Extremity, and marked with high Veins. But theſe come to us but ſeldom.

The beſt Sort of Sena is the *Alexandrian*. It ought to be freſh, of a yellowiſh green Colour and quick Scent, gentle to the Touch, entire, free from Stalks and Spots, and to give by Infuſion a deep Colour to Water.

Not only the Leaves, but likewiſe the Fruit or Follicles, as they are called, are uſed in Phyſick. Theſe are oblong, crooked, ſmooth and flat membranous Pods, of a reddiſh or dark green Colour, containing

containing flattiſh Stones, almoſt like Grape-Stones, which are pale-coloured or blackiſh.

Sena was unknown to the older *Greeks* and *Latins*. Yet ſome doubt whether *Dioſcorides* and *Galen* were ignorant of it; becauſe the Interpreters of *Meſue*, where he ſpeaks of a Decoction of Sena, quote *Galen*; though in Reality it is not to be met with in his Writings. But this is not the only Inſtance wherein the Authority of the *Greeks* has been falſely alledged by the *Arabians*. However, *Ruellius* confounds it with the *Colutea* of *Theophraſtus*; but *Matthiolus* has ſufficiently proved his Miſtake. And indeed as *Averrhoes* aſſerts it to be a new Plant, and a Stranger to the Ancients, we may thence infer, that its Uſe was introduced by the *Arabians*. *Serapio* firſt made Mention of it, and after him *Meſue*. Among the later *Greeks*, the firſt Mention of it occurs in *Actuarius*, who has given an Account of its Virtues.

The Plant is called *Senna Alexandrina, ſive foliis acutis*, C. B. P. 397. *Sena*, J. B. 1. 377. *Sena orientalis*, *Tabern. Icon.* 517. It is ſown in *Perſia*, *Syria* and *Arabia*, from whence it is carried into *Egypt* and to *Alexandria*.

The Leaves of Sena, being chymically treated in the Quantity of four Pounds and four Ounces, yielded fifteen Ounces of alkaline urinous Liquor, with about nine Ounces of acid Liquor, which came promiſcuouſly from the Retort; ſix Ounces, one Drachm and twelve Grains of thick Oil, and one Drachm of volatile urinous Salt. The black Maſs remaining in the Retort weighed eighteen Ounces, ſeven Drachms and a Half. This being calcined fourteen Hours, continued flaming four Hours, and at laſt only four Ounces and a Half of grayiſh brown Aſhes were left; from which were got by Lixiviation one Ounce and fifty ſix Grains of mere alkaline Salt.

Four Ounces and five Drachms of the Oil above-mentioned, being rectified by Diſtillation, gave up three Drachms of liquid Oil, with three Ounces and five Drachms of thick Oil of the Conſiſtence of Butter; and three Ounces, eight Grains, of black Earth were left in the Retort.

From this *Analyſis* it appears that Sena contains a twofold Salt, the one ammoniacal, the other tartarous, united by a large Quantity of thick Oil. Hence ariſes a gummo-reſinous Compound, to which its purgative Virtue is owing: For the Extract of Sena made with Water is ſtrongly acrimonious, and eaſily takes Fire when it is dry.

This Drug has an extraordinary cathartick Virtue, no Medicine being more frequently uſed as a Purge, or to greater Advantage. Authors have wrote differently concerning its Qualities; as alſo the Humours which it evacuates. *Actuarius* aſſerts that it diſcharges Bile and Phlegm, though he has againſt him the Authority of *Averrhoes*, who ſays Phlegm is not purged by this Medicine. *Meſue* ſays it draws Melancholy and aduſt Bile from all the Bowels; and *Sylvius*, a Phyſician of *Paris*, often obſerved it to purge Water. In this Diſagreement of Opinions, *Rolfincius* pronounces that Sena evacuates that Humour which abounds, and is burdenſome to Nature. We ſhall ſcarce find another Medicine which ſo effectually carries off corrupted, thick, and conſtipated Humours, or ſo powerfully removes old Obſtructions. In long and ſlow Diſeaſes, ariſing from Foulneſs, or old Obſtructions of the Bowels, it is, ſays *Fernelius*, a ſingular Remedy; as in ſlow and inveterate Fevers, Melancholy, Epilepſy, Scab, Tetters, *Vitiligo*, Leproſy, and in ſhort in all Impurities of the Blood. It often occaſions Gripings of the Belly; but this is not to be aſcribed to its Flatulency, but to the Humours,

Humours, which being adhesive, and generally acrimonious, are not to be drawn off without a painful Sensation. However, Physicians try several Means to correct this Quality, whereby it is at least abated, though perhaps not totally destroyed. Some mix it with Substances which strengthen the Stomach and Intestines; as Ginger, Cinnamon, or Spikenard: Some, with such Things as gently relax without griping; as fat Broths, Prunes, Jujebs, Raisins, Violets, Marsh-Mallows, Polypody, *&c.* and others, with Medicines which discuss Wind by inciding the viscid Humours; of which Sort are Anise, Fennel, Coriander, Salt of Tartar, of Wormwood, or the like. Indeed, the purgative Virtue of Sena depending upon a gummo-resinous Substance which exerts its Operation in a twofold Manner, (*viz.*) by dividing the thick and viscid Humours, and likewise principally by irritating the nervous Fibres of the Intestines to contract themselves; the less this Resin is extended, the more it will adhere to the Fibres, and produce the stronger Irritation; and the more it is extended, the less will be its Adhesion, and the less also its Irritation. Therefore, whatever can extend this resinous Substance, will make it operate with greater gentleness; as a large Quantity of Liquor; alkaline Salts, which have a Property of dividing resinous Bodies; or Oils, which easily dissolve them. Thus, a Tincture of Sena, made in a large Draught of Ptisan or Broth, purges excellently, and with less Uneasiness than in a small Proportion of Water. Mucilaginous and emollient Substances, by involving its resinous Parts, render their Action more gentle; but then, as they weaken the purgative Force of the Medicine, its Effects are not so much to be depended on.

Sena has been obſerved to be highly prejudicial in thoſe Diſeaſes wherein the Humours are in a State of Effervescence, or the ſolid Parts inflamed: So that in Hemorrhages, in all Kinds of inflammatory Diſtempers, and in Affections of the Breaſt we ought to avoid it. Theſe excepted, there is ſcarce any Diſeaſe in which it may not be conveniently given, provided that the Rules of Art be duly regarded.

Some have ſtarted a Controverſy concerning the Preference of the Leaves, or Follicles. Among the Ancients, *Meſue*, *Actuarius* and *Serapio*, and among the Moderns, *Fernelius*, *Lobelius* and *Pena*, prefer the Follicles: But *Monardus*, and moſt Phyſicians of this Age, are of the contrary Opinion. Indeed the Follicles are not ſo griping as the Leaves, but are much weaker in their Operation.

Sena is given either in Subſtance, Infuſion, or Decoction. It is preſcribed in Subſtance or Powder from ℈j. to ʒj. though ſeldom; becauſe the Doſe being too large is inconvenient to take, and likewiſe occaſions greater Uneaſineſs in working. The Infuſion and Decoction are more eligible, in Caſe too much Heat be not uſed in preparing them; for *Meſue* obſerves, that the purgative Virtue of this Drug is eaſily extracted, and that it evaporates by long boiling. It is ordered in Infuſion or Decoction from ʒj. to ℥ſs. either alone, or with other Catharticks.

To correct the nauſeous Taſte of Sena, ſome direct it with the Leaves of a Plant imported from *Braſile*, called *Iquetaia*, which *M. Marchand*, Fellow of the Royal Academy of Sciences, has diſcovered to be the *Scrophularia aquatica major*, C. B. P. *The great Water-Figwort*. Theſe Leaves are infuſed with Sena in hot Water, and the Tincture ſo obtained is not unpleaſant.

Take the Leaves of Sena cleanſed and of the great Water-Figwort ā ʒij. Pour upon them ℔j. of hot Water, and let them ſtand in Infuſion till the Water is cool. A Draught of this may be taken now and then to relax the Belly.

Take of Sena cleared of the Stalks ʒij. Salt of Wormwood ℈j. Infuſe them a Night in ʒvj. of common Water. Let the ſtrained Liquor be taken in the Morning on an empty Stomach, either alone or mixed with Broth.

Take of Sena ʒij. *Calabrian* Manna ʒiſs. Rhubarb cut ſmall and ſoluble Tartar ā ʒj. Pour upon them ʒxij. of a Decoction of Prunes or Raiſins, and let them ſtand ſix Hours in warm Infuſion; then ſtrain the Liquor, and divide it into two Draughts.

Take of oriental Sena ʒij. *Sal polychreſtum* ʒj. Infuſe them in ʒvj. of warm Water ſix Hours. In the ſtrained Liquor diſſolve of the ſolutive Electuary of Prunes ʒij. of the Syrup of Peach-Bloſſoms ʒj. Make a purging Potion to be taken in the Morning, ſome Broth being drank about two Hours after it.

Take of Sena ʒiij. Manna ʒij. ſoluble Tartar ʒiſs. Coriander-Seed ʒj. Liquorice dried, ſhaved and bruiſed, ʒj. To theſe add a Citron cut into Slices, and pour upon them ℔ij. of boiling Water. Infuſe for ſix Hours and ſtrain the Liquor; whereof a ſufficient Quantity is to be taken at ſeveral Draughts.

An Extract is prepared from Sena in the ſame Manner as from Rhubarb. It is preſcribed from ʒſs. to ʒij. though rarely; for it purges but little, and gripes more violently than the Infuſion.

ARTIC.

ARTIC. IV. *Of* DITTANY *of* CRETE.

Dictamnum Creticum et Dictamnus Cretica, *Offic.* Δίκταμον, *Theophraſt.* Δίκταμνος, *Dioſc.* Δίκταμνον, *Gal. Dictamnum*, *Plin. Dictamnus*, *Virgilii.* Theſe Names are aſſigned to ſome Leaves which are uſually found in the Shops. They are ſomewhat roundiſh, about an Inch long, inclining to a green Colour, covered with a thick white Down, and frequently grow upon ſmall Stalks, on the Tops of which are long ſcaly depending Heads of a purpliſh Colour. The Leaves have a fragrant, agreeable Smell, and acrid, aromatick, hot Taſte. They are brought from the Iſland of *Candy*, which was anciently called *Crete*. They ought to be choſen freſh, ſound, whole, free from Mouldineſs, covered with Down, and of an hot Taſte and good Smell.

Dioſcorides deſcribes three *Species* of Dittany. 1. Δίκταμνος κρητικὴ, *Dictamnum Creticum*, *ſeu* γληχων ἀγρία, *Pulegium Sylveſtre*, *Quorumd.* 2. ψευδοδίκταμνος, *Dictamnum ſpurium.* 3. Δίκταμνος κρητικὴ ἑτέρη, *Dictamnum Cretenſe alterum*, *foliis Siſymbrii.* Theſe three *Species* are likewiſe mentioned by *Pliny.* The firſt is that which occurs in the Shops, notwithſtanding they aſſert it has neither Flower nor Fruit. But we muſt believe, that *Dioſcorides* was either led into this Miſtake by others, or, as *Matthiolus* thinks, that his Words have been altered; becauſe *Theophraſtus* ſuppoſes it to bear Fruit, *l.* ix. *Hiſt. c.* 16. where he ſays the Leaves only are uſed, and neither the Branches, nor Fruit. *Damocrates* alſo in *Galen*, l. 5. καλὰ γένη, ſpeaks of Dittany as bearing Flowers. Beſides, the Poet *Virgil* expreſsly mentions both the Flower and the Stalk, *Æn.* l. 12.

Dictamnum genitrix Cretæâ carpit ab Idâ,

Puberibus caulem foliis, et flore comantem Purpureo.

Neither is *Pliny* to be regarded, who following *Dioſcorides* in his Miſtake tells us, *l.* xxv. *c.* 53. that Dittany has no Flower, nor Seed, nor Stalk: Wherein he ſeems to contradict himſelf, having ſaid above from *Theophraſtus*, that the Leaves only are uſed. And accordingly the Leaves are commonly brought alone, the flowery Tops being very ſeldom imported with them.

The Plant is called *Origanum Creticum latifolium, tomentoſum, ſeu Dictamnus Creticus, Inſt.* R. H. 199. *Dictamnus Creticus*, C. B. P. 222. It grows wild in the Clefts of Rocks in *Candy*, and *Greece*.

It contains a large Quantity of eſſential Oil, joined with a volatile Salt, as we may conjecture from its Smell and Taſte.

Among the Ancients it is greatly commended for promoting the Excluſion of a dead *Fœtus*, expelling the Secundine, provoking the *Menſes*, curing Wounds, and againſt Poiſons, and venomous Bites and Stings. *Hippocrates*, as *Galen* relates, among the Remedies he was acquainted with for helping forward the After-Birth, places Dittany in the firſt Rank. There goes an old Fable, that when Goats in *Candy* are wounded, they make the Dart fall from the Wound by browſing upon this Plant.

It is given in Powder from ʒſs. to ʒj. and infuſed in Wine from ʒj. to ℥ſs. to forward Delivery, and to expel a *Mola* or falſe Conception, a dead *Fœtus*, or the After-Birth; as alſo in malignant Fevers, and againſt the Bites or Stings of poiſonous Animals.

ARTIC.

ARTIC. V. *Of* SYRIAN MARUM.

Marum Syriacum, *Off.* The Leaves of *Syrian* Marum are of a pale green Colour above and hoary underneath, in Shape reſembling the Point of a Spear, or like the Leaves of Thyme, ſomething leſs than thoſe of common Marum. They have a bitter acrid Taſte, and a ſtrong, quick, pungent, and agreeably aromatick Smell, eſpecially when rubbed betwixt the Fingers, whereby they occaſion Sneezing. The Flowers, which are ſometimes found in the Shops with the Leaves, are entirely like the Flowers of *Chamædrys* or Germander, whence *Tournefort* reckons this Plant a *Species* of it. They are monopetalous, of a purple Colour, and labiated: In the Place of the ſuperior Lip are the *Stamina*, and the inferior Lip is divided into five Sections, forming a broad Cavity in its Middle like a Spoon.

The Plant is called *Chamædrys martima*, *incana*, *fruteſcens*, *foliis lanceolatis*, *Inſt.* R. H. 205. *Marum Cortuſi*, J. B. 3. 242. *J. Raii* H. 527. *Tragoriganum latifolium*, C. B. P. *Tragoriganum latifolium*, *ſive Marum Cortuſi Matthiolo*, *Parkinſ.* *Tragoriganum Lobelii Gerard.* It grows wild in *Syria* and *Candy*, and very common in *Porte-Croz*, one of the *French* Iſlands which are called *les Iles d'Hieres*.

In a chymical Analyſis, from two Pounds and three Ounces of the Leaves and flowery Tops of Marum diſtilled from a Retort, were drawn, one Pound, eight Ounces, one Drachm and thirty ſix Grains of clear Liquor, though ſomewhat reddiſh towards the End, of a pleaſant aromatick Smell and Taſte, at firſt obſcurely acid, afterwards by Degrees more manifeſtly acid, and more and more auſtere; ſix Drachms, thirty ſix Grains of empy-

reumatick reddiſh Liquor, of a Taſte ſomewhat acrid and pungent, very acid and auſtere, and alſo ſaline; one Ounce and one Drachm of red Liquor, both acid and alkaline urinous, and impregnated with a volatile urinous Salt; one Ounce and four Drachms of Oil, as well thin or eſſential, as thick, of the Conſiſtence of an Extract. The black Reſidue weighed four Ounces: Which, being perfectly calcined, left one Ounce, one Drachm and twelve Grains of whitiſh Aſhes; from which were got, by Lixiviation, three Drachms and twenty four Grains of fixt Salt merely alkaline. The Loſs of Parts in Diſtillation was three Ounces and three Drachms: In Calcination, two Ounces, ſix Drachms and ſixty Grains.

The Leaves of Marum turn blue Paper red. Being diſtilled when they are dry with a large Proportion of Water, like other aromatick Plants, they yield a ſubtile and extremely penetrating eſſential Oil. They contain an eſſential tartarous Salt; and beſides, a copious, fine, volatile Acid, and a moderate Portion of alkaline urinous Salt, joined with a large Quantity of acrid aromatick eſſential Oil. Whence ariſes a Compound not unlike a Mixture conſiſting of a dulcified acid Spirit and a volatile urinous aromatick Spirit.

The Smell of Marum is ſo wonderfully agreeable to Cats, that when it is planted in Gardens it allures them from all Quarters of the Neighbourhood to the Place where it grows, and renders them, as it were, inraged, and actuated by a venereal Fury; inſomuch that they tear and knaw it with their Mouths, roll themſelves about upon it, ſlabbering it all over with their Spittle, and ſometimes polluting it with their Seed *. Upon this Account it

* Mr. *Ray*, in his *Catalog. Cantab.* obſerves that the *Mentha felina*, or Catmint, has much the ſame ſurprizing Influence upon theſe Creatures.

is

is very difficult to nurſe it up in Gardens, unleſs an Iron-Cage be put over it as a Defence.

Marum is ſeldom uſed in the Shops; though it is by no Means to be ranked in the loweſt Claſs of aromatick Plants. *Mindererus*, in his *Aloedarium Marocaſtinum*, and *Wedelius*, have each of them honoured it with a particular Diſſertation, and have highly extolled it. *Wedelius* attributes to it a Virtue of inciding, attenuating, opening and digeſting, of correcting the Lentor of Phlegm, and an inert State of the Bile, of increaſing the Motion of the Blood and Spirits, and a peculiar Efficacy in curing cold and moiſt Affections. He reckons it an extraordinary Diuretick, a powerful Diaphoretick and Carminative, one of the beſt of Antiſcorbuticks in a cold Scurvy, a ſtrong Emmenagogue, and a moſt excellent Cephalick, Pectoral, Antiaſthmatick, Cardiack and Stomachick; that it is likewiſe good in Diſeaſes of the Liver, Spleen, Womb, and Nerves; as alſo in Impotency, and Diſorders from Worms: In a Word, he eſteems it a true *Polychreſtum*. But perhaps this celebrated Phyſician was too eaſily induced by its exquiſite Smell to be over prolix in his Commendations, and to aſcribe to it the whole Catalogue of Virtues which are found in all other Aromaticks. We muſt therefore wait till further Experience ſhall demonſtrate its Properties. *Etmuller* ſays it is of Service in Headaches and nervous Affections, and that it is an excellent Remedy in Apoplexies and Catarrhs. The Leaves are preſcribed in Powder to ʒſs.

Externally the Powder is reckoned an extraordinary Errhine, either alone, or mixed with Tobacco. It is ſaid to purge and ſtrengthen the Brain, and to reſtore Loſs of Smelling.

John Quincy, a Phyſician of *England*, in his *complete Engliſh Diſpenſatory*, prepares from the Leaves

of Marum a *Sal volatile oleosum*, which is gratefully aromatick, and a most excellent Cephalick. They are an Ingredient in *Venice*-Treacle. Their essential Oil, which is also cephalick, uterine, and antiparalytick, is greatly coveted by the *Dutch*.

ARTIC. VI. *Of* BALAUSTINES.

Balaustia, *Off.* Βαλαυστία, *Dioscor.* These are the large Flowers of the wild Pomegranate-Tree. They are composed of a close Thrum of purplish Leaves, and a *Calyx*, which is not oblong, as in the Flowers of the cultivated Pomegranate-Tree, but flat and broad, of a yellowish purple Colour, with an hard, woody Texture, and divided into many Sections. The *Calyx* is used in Medicines indiscriminately with the Flower.

The Tree from which the officinal Balaustines are got, is distinguished *Punica flore pleno majore*, J. R. H. 636. *Malus Punica flore pleno*, *Hort. Reg. Paris.* *Balaustia Hispanica*, J. B. 1. 82. *Balaustium*, *Tabern. Icon.* 1033. *Balaustia flore pleno majore*, C. B. P. 438. *Malus Punica Sylvestris major*, *sive Balaustium majus*, *Parkinson.* *J. Raii Hist.* 1463. It grows in *Spain*, *Italy*, *Provence*, and other Countries.

Balaustines are drying, incrassating, and astringent, yet not quite so much as the Bark of the Pomegranate. Their Use is very common in all Kinds of Fluxes (*viz.*) in Diarrhœas, Dysenteries, uterine Fluxes, and Hemorrhages; as also against Laxness of the Gums, Ruptures, *&c.* They are prescribed in Powder to ʒj. and to ʒss. in Decoction, and are used in Electuaries, Decoctions, Draughts, or astringent Injections and Lotions; and likewise in Collyriums to preserve the Eyes in the Small Pox, or Measles.

Take

Take of Balauſtines powdered ʒſs. *Armenian* Bole, ſealed Earth, red Coral and *Japan* Earth, ā ʒij. Syrup of Quinces or dried Roſes, q. ſ. Mix and make an Electuary, to be given in Fluxes of the Belly, after due Preparation. The Doſe is ʒj. two or three Times a Day.

Take of Balauſtines ʒij. Pomegranate-Bark, Dragon's Blood, prepared Blood-Stone, and cryſtalline Allum, ā ʒj. Conſerve of Roſes ʒſs. Syrup of Comfrey q. ſ. Mix and make an Electuary. The Doſe is ʒj. in Fluxes of the Belly, and Hemorrhages.

Take of Plantain-Leaves M. j. Balauſtines and red Roſes ā M. ſs. Boil them in ℔ij. of Smith's Water to ℔j. in the ſtrained Decoction diſſolve of Roch Alum ʒſs. Syrup of Pomegranates, or Barberries, ℥j. This may be uſed either by Way of Injection, or as a Gargariſm.

Take of Balauſtines M. ſs. Pomegranate Bark bruiſed ʒij. Infuſe them warm for ſome Hours in the diſtilled Waters of Roſes and Plantain ā ℥vj. then boil them gently, and filtre the Decoction through Cap-Paper; with which mix well in a Mortar of Saffron powdered very fine gr. vj. Camphore gr. ij. Make a Collyrium, and foment the Eyes with it now and then in the Small Pox.

ARTIC. VII. *Of* STOECHAS.

Stœchas, *Stœchas Arabica*, *et Flores Stœchados*, *Off.* Στίχας, *Dioſc.* Στοίχας, *Gal.* By theſe Names are denoted the dry flowery Tops of a Plant. They are oblong, ſcaly, and purpliſh, of a ſubacrid, bitteriſh Taſte, and agreeable fragrant Smell. They are made choice of freſh, odorous, and bitteriſh.

The Plant is called *Stœchas purpurea*, C. B. P. 216. *Stœchas Arabica vulgo dicta*, J. B. 3. 277. *Stœchas brevioribus ligulis*, *Clus. Hiſt.* 344. It grows plentifully in *Languedoc*, and in thoſe Iſlands on the Coaſt of *Provence* which the *French* call *les Iſles d'Hyéres*.

A conſiderable Quantity of aromatick eſſential Oil is obtained from Stœchas by Diſtillation, to which its Smell and Virtues are owing.

It is chiefly uſed in cold Affections of the Head and Nerves: It moreover provokes Urine and the *Menſes*, and reſiſts Poiſons. *Meſue* aſſerts that the Plant purges Phlegm and black Bile, though very ſlowly and weakly; but by the Moderns it is not reckoned among Purgatives. An eſſential Oil is drawn from theſe flowery Tops, as from the Tops of Lavender, and its Virtues are the ſame; but it is ſeldom uſed in Medicines.

CHAP. VI.

Of FRUITS *and* SEEDS.

ARTIC. I. *Of* RAISINS *and* CURRANTS.

THESE are the ripe Fruits of manured Vines which have been dried in the Sun. Sometimes they are dried in an Oven; but by this Management they are rendered more acid, and are rarely uſed in the Shops.

We are then to underſtand by the *Uva paſſa Off.* and the ῥαφὶς of *Dioſcorides*, all cultivated Grapes that have ſuffered a due Inſolation. The ancient *Greeks* diſtinguiſhed two Sorts. The one conſiſted of Grapes, which having the Foot-Stalks of their Bunches

Bunches cut half through, or bound tight about with Thread, were left to hang a long Time upon the Tree to dry in the Sun. Theſe they called σαφυλαὶ παλεθεῖσαι. The Grapes of the other Sort were taken off the Tree, and being afterwards expoſed to the Heat of the Sun were called σαφυλαὶ θηλοπευθεῖσαι. But as theſe different Methods could produce no eſſential Difference in the Grapes, we ſhall here take no further Notice of them.

In the Shops at preſent we diſtinguiſh three Sorts of inſolated Grapes (*viz.*) 1. *Paſſulæ Maximæ, ſeu Damaſcenæ*; Raiſins of *Damaſcus*. 2. *Paſſulæ minores, ſeu Vulgares noſtrates*; Raiſins of *Provence*. 3. *Paſſulæ minimæ, ſeu Corinthiacæ*; *Corinthian* Raiſins or Currants.

1. *Uvæ paſſæ maximæ, ſeu paſſulæ Damaſcenæ, Off. Zibib. Arab. Zibebæ, quorumd.* Theſe are dried Grapes, full of Wrinkles, flat, about an Inch long and broad, of a yellowiſh brown Colour, half tranſparent, fleſhy, ſcattered over with a ſaccharine eſſential Salt, containing few Stones, and of a ſweet, but not very agreeable, Taſte. When they are over and above fat or clammy, ſo as to ſtick to the Fingers, covered with Meal, rotten or void of Juice, they are to be rejected.

The Plant is the *Vitis Dameſcena, Hort. Reg. Paris.* It differs from other Species of Vines chiefly in bearing Grapes of a larger Size, in Figure reſembling a *Spaniſh* Olive or Prune.

2. *Uvæ paſſæ minores, ſeu Vulgares, Off. Paſſulæ Maſſilioticæ, quorumd.* Theſe are Grapes dried in the Sun like the former, but leſs, having an agreeable ſweet Taſte, as if they were preſerved in Sugar. They are often ſubſtituted for the Raiſins of *Damaſcus*, as differing not greatly from them. They are cured in *Provence* and *Languedoc*, but are not always the Produce of the ſame *Species* of Vine,

for ſome take the Fruit of the *Vitis Apiana*, C. B. P. 298. which is commonly called the *Muſcadine* Grape; ſome chuſe the Grape of *Picardy*; ſome the *Aujubini*, as they are termed; and ſome give the Preference to other Sorts.

The People of *Montpelier* cure their Raiſins thus. They tie the Bunches two and two together with Thread, and having cut away the bad Grapes with Sciſſars, dip them over in hot Lye, to which is added a ſmall Quantity of Oil, till they grow flaccid and begin to wrinkle. After this they put them upon long Poles to dry for three or four Days, and then lay them in the Sun.

In ſouthern Countries, by bruiſing Raiſins in hot Water, and letting them ſtand to macerate and ferment, they make a good agreeable Wine of a ſtrong Body, from which they draw, by Diſtillation, both Brandy and ſtrong Spirit of Wine.

3. *Uvæ paſſæ minimæ*, *Paſſulæ Corinthiacæ*, *Off.* Theſe alſo are dried Grapes, of a dark Colour with a Caſt of Purple, about the Bigneſs of Garden-Currants or Elder-Berries, without Stones, and of a ſweet Taſte with a gentle and pleaſant Acidity. They ought to be freſh and well kept. When they are covered with Slime, or moiſtened with Honey, of a mouldy Smell, too dry, or rotten, they are not fit for Uſe. They are called *Paſſulæ Corinthiacæ*, becauſe they were formerly much cultivated about *Corinth*; where they are not to be met with at preſent, being perhaps neglected by the Inhabitants.

The Vine, upon which theſe grow, is like others; the Leaves only are larger, thicker, and not divided into ſo many *Laciniæ* or Sections, which are alſo more obtuſe; their Colour on the under Side is hoary, and the Fruit is much ſmaller, being ſcarce above the Size of Garden-Currants, and including

cluding no Stones. It is cultivated in *Zante*, *Cephalonia*, and other Iſlands ſubject to the States of *Venice*. There are ſome Trees which bear white Grapes, but ſuch only, as produce black, are uſually propagated.

In the Month of *Auguſt*, when the Grapes are ripe, they are gathered, and ſpread about thin upon the Ground to dry in the Sun; and then are carefully cleanſed and put up into Ware-houſes, where an Opening is left in the Roof of the Building to receive them. When the Place is quite full up to the Top, they gradually ſink down lower by their own Weight, and in a ſhort Time are clotted ſo together, that pointed Tools of Iron are employed to dig them out. After this, when they are put into Buts for Exportation, a Man gets into the Veſſel barefoot, and as the Currants are thrown in, one Parcel after another, he tramples upon them, preſſing them always into a leſſer Space; in order not only, that the Veſſel may contain more, but alſo, that the Currants, by thus excluding the Air, may keep longer without ſpoiling. The Conſumption of this Commodity is very great; for beſides what is ſpent in the Shops for Phyſick, a much larger Quantity is taken off for the Uſes of the Kitchen.

Raiſins and Currants contain a ſweet melleous Juice, leſs viſcid than that of Jujubes, or Sebeſtens, but more nutritive. However, as they readily ferment, no wonder that too large a Quanty of them ſhould diſorder the Belly; for they render the Bile more fluid and active like other ſweet Subſtances, which are generally ſaid to change into Bile. Moreover they divide and attenuate all the Juices in the Body, removing their Viſcidity and diſpoſing crude Humours to Concoction. They are commended for relaxing the Belly, and being ſerviceable

able to the Breaſt, Lungs, Wind-pipe, Kidneys, Bladder, and Liver. In Roughneſs or Dryneſs of the Jaws, they have a ſoftening Efficacy, and are conducive in all Diſeaſes of the Breaſt and Lungs, by promoting the Concoction and eaſy Expectoration of Phlegm. But to anſwer theſe Intentions Raiſins ought to be ſtoned; for otherwiſe they have an aſtringent Virtue, are helpful in bad Digeſtion, and proper to eat in a Dyſentery, Looſeneſs, or hepatick Flux.

In inflammatory Fevers, or an hot State of the Bile, both Raiſins and Currants ought to be avoided; for in theſe Diſorders they increaſe the Effervescence of the Humours. Being too frequently eaten they are prejudicial to the Gums, as they vellicate and diſpoſe them to Putrefaction. They are often uſed in pectoral Ptiſans to ſoften the Acrimony of the Humours, and in Decoctions to correct the diſagreeable Taſte of other Medicines. The uſual Quantity in Preſcription is one Ounce to every Pint of Liquor.

Take Raiſins ſtoned and cut ſmall ℥iv. Boil in ℔iv. of Water to ℔iij. and keep the ſtrained Liquor for a pectoral Decoction.

Take of this Decoction and Lime-Water ā. p. æ. Mix and give ℥vi. twice or thrice a Day. This is an efficacious Remedy in a Catarrh.

Take of Sarſaparil ℥vi. Currants ℥viij. Boil in ℔xij. of Water till a fourth Part is evaporated. In the ſtrained Decoction ſlake ℔ſs. of Quick-Lime, and when it has ſtood to ſettle decant the clear Liquor. The Doſe is ℥iij. three or four Times a Day in Catarrhs, Ulcers of the Lungs, and ſcrophulous Affections.

Take Raiſins ſtoned ℥ij. Liquorice ſhaved and bruiſed ʒi. boil in ℔iij. to ℔ij. adding towards the

the End ʒiij. of Sena. Let them infuſe together warm for one or two Hours; then ſtrain and give a Glaſsful of the Liquor every now and then. This is a gentle purging Medicine and not unpleaſant to take *.

ARTIC. II. *Of* FIGS.

Ficus paſſæ, ſeu Caricæ, Off. Ἰσχάδες *et* Καρίκαι, *Græcor.* Theſe are ripe Figs dried in the Sun. In the Shops we meet with three Sorts (*viz.*) 1. The large yellow Figs, which are called *Ficus pingues.* 2. The large *Violet-Figs.* 3. The ſmall Figs, which are brought from *Marſeilles*, and are much ſweeter than the others. The beſt are ſoft, and gentle in the handling, heavy, with a thin ſoft coat, full of Juice and yellow Seed, and taſting like Honey. On the contrary, when they are hard,

* We muſt here obſerve, that inſtead of the Raiſins abovementioned, in *England*, we make uſe of two Sorts which are imported from *Spain* (viz.) the *Uvæ paſſæ majores*, or Raiſins of the Sun, and the *Uvæ paſſæ Malacenſes*, or *Malaga* Raiſins. The firſt are dried upon the Tree with the Sun, in the ſame Manner as the σταφυλαὶ ϖαλῃθεῖσαι of the ancient *Greeks*, and the laſt are cured like thoſe of *Montpelier*. Theſe in general have the ſame Virtues with the Raiſins we have been ſpeaking of; yet in particular Circumſtances one Sort may be preferable to the other; as Dr. *Quincy* judiciouſly remarks in his Diſpenſatory, *p.* 555. "As to Raiſins, ſays he, take this Rule in "general, that in all cathartick or detergent Compoſitions, "thoſe which the Grocers ſell by the Name of *Raiſins of the* "*Sun*, are moſt proper; becauſe they are ſharp, and attenu-"ating: But in all Pectorals and Vulneraries, the *Malaga* "Raiſins are much to be preferred; they being more fat, ſoft "and emollient. Which by the Way is a Difference very few "attend to, to the great Detriment of many a good Preſcrip-"tion."

The Currants which are taken Notice of above, are the ſame that are uſed in our Shops by the Name of *Uvæ paſſæ minores, ſeu paſſulæ Corinthiacæ.*

full

full of Worms, of a ſtrong Smell, or black, they are bad.

The Tree is the *Ficus Sativa*, *Inſt.* R. H. 662. *Ficus Communis*, C. B. P. 457. It is cultivated in *Provence*, *Italy*, *Spain*, and other Countries *.

Figs, both freſh and dry, are uſed much for Food, eſpecially in the more ſouthern Climates. When they are freſh and ripe they are of eaſy Digeſtion in the Stomach, being ſooner concocted than any other horary Fruit. *Galen* tells us, that from twenty eight Years of Age, in order to preſerve his Health, he always abſtained from all Summer-fruits, except Grapes and Figs perfectly ripe. This Fruit is moderately nutritive, mollifies the Belly, and is ſerviceable to the Lungs, Kidneys, and Bladder, having an abſterſive Quality, and removing gravelly Concretions. The Blood, however, which is produced of Figs, is not the moſt laudable; and being too frequently uſed they occaſion Flatulencies, hurt the Liver and Spleen, and render the Fleſh lax, turgid, and flabby. Perſons who are liable to Obſtructions of the Bowels, or whoſe Belly is over moiſt, ought to avoid uſing them. It is always proper after eating them, to drink plentifully of ſome diluting Liquor; otherwiſe by ſtopping in the Stomach or Inteſtines, and corrupting, they may be the Cauſe of putrid Fevers.

The Moderns oftener make uſe of Figs in Medicines when they are dry. Phyſicians in general allow them to be good in Aſthmas, Coughs, and other Diſorders of the Breaſt and Lungs: For by Virtue of the melleous Juice, wherewith they abound, they ſoften and relax the Belly, and ſtimu-

* The Figs which are uſed with us in Medicines come chiefly from *Spain* and *Portugal*, where they are cured by dipping them firſt in ſcalding hot Lye, and afterwards drying them in the Sun.

late

late the Inteſtines to Excretion; eſpecially when they are taken before Meals. They concoct, ripen, and deterge thick Humours, which ſtuff up the Breaſt, cleanſe the Kidneys of Gravel, aſſwage Pains in the Bladder, and are reckoned to facilitate Delivery, being eaten for a few Days before Labour, and are often taken for this Purpoſe roaſted. They provoke Sweat and forward the Eruption of Puſtules; for which Reaſon many Phyſicians preſcribe them in the Meaſles and Small Pox. Some commend a Decoction of them to be drank plentifully for the Pains in the Plumbers Colick; and being frequently held or gargled in the Mouth, it brings all Tumours and Abſceſſes of the Jaws and neighbouring Parts to a ſpeedy and eaſy Suppuration. *Galen* aſcribes to them a Virtue of reſiſting deadly Poiſons; and it was of theſe that *Mithridates* made his famous Antidote, which he uſed to take as a Preſervative againſt Poiſon. This Compoſition conſiſted of twenty Leaves of Rue, two dry Figs, and as many dry Wall-Nuts, pounded together with ſome Bay-Salt.

Galen, *P. Ægineta*, *Oribaſius*, and likewiſe ſome modern Writers, are fully perſuaded that the frequent Uſe of Figs produces Lice. Yet *Athenæus*, l. 2. *Deipnoſoph.* obſerves that *Anchimolus* and *Moſchus*, both Philoſophers and Rhetoricians of *Elis*, were not ſubject to this Inconvenience, notwithſtanding their common Diet all their Life had been only Figs and Water. He adds, however, that their Sweat was of ſo rank a Smell, that all People avoided coming near them in the publick Baths: Whence *Simon Paulli* adviſes thoſe who have a fœtid Smell under the Arm-pits to abſtain from Figs. They ferment and rarify the Bile like Honey, Sugar, and other ſweet Things; and are therefore very improper in bilious Temperaments, in Fevers ariſing

from Bile, and Inflammations of the Spleen and Liver. They are preſcribed in pectoral Decoctions to v. or vi. in Number to every Pint of Liquor. In preparing Decoctions of Figs and ſuch like Subſtances, we muſt remember not to overload them with the Ingredients, leſt becoming thick and roapy, they ſhould oppreſs the Stomach, and not eaſily paſs off by Urine.

Take dry Liquorice, ſcraped and bruiſed, ʒj. Figs N°. vi. Boil in ℔j. of Water to a Conſumption of Half. Strain and give a Spoonful of the Liquor every now and then in a troubleſome Cough, to ſoften the Acrimony of the Humours and to promote Expectoration.

Take of the Leaves of Hyſſop M. j. Figs N°. vi. Boil in ℔ij. of clear Water to ℔j. Give the ſtrained Decoction warm in the Fit of an Aſthma.

Take of the Shavings of Hartſhorn ℥ſs. Figs N°. vi. Seeds of Columbine and Fennel ana ʒij. Make a Decoction in q. ſ. of Water; of which let the Patient take a Glaſsful now and then warm, to forward the Eruption of the Meaſles and Small Pox.

Take fat Figs N°. xij. Cut them ſmall and macerate for two or three Hours in ℔j. of hot Milk; then boil them gently, and keep the ſtrained Liquor for a Gargle in Inflammations of the Jaws and Tonſils.

Figs externally in the Form of a Cataplaſm, roaſted or boiled in Milk, either diſcuſs Tumours or bring them to Concoction. They likewiſe ripen and break Impoſthumations; and being bruiſed, together with ſome Leaven and Salt, make peſtilential Buboes ſuppurate in a little Time. When roaſted

roasted they ripen Tubercles of the Gums; and speedily allay Pains of the Hemorrhoids, being applied to the Part affected.

ARTIC. III. *Of* COLOCYNTH.

Colocynthis et pulpa Colocynthidos, *Off.* κολοκυνθὶς, *Dioſc. et Gal.* σικυώνη *et* σικυώνης σπόγγον, *Hippoc. Haanthal*, *Arab. Kandel*, *Serapion. Fel Terræ et nex Plantarum quorumd.* Colocynth (called alſo Coloquintida, Bitter Apple, or Bitter Gourd) is a Fruit of a ſpherical Figure about the Bigneſs of one's Fiſt or an Orange, whereof the outer yellowiſh Bark being cut away, the dry Pulp or Pith only is brought to us; which is ſpongy, or, as it were, full of Cells compoſed of ſmall membranaceous Leaves, of a white Colour, very light, and of an extremely bitter nauſeous Taſte, offending the Jaws by its Acrimony, and containing ſmall, flattiſh, hard, white or reddiſh Seeds, about the Size of Cucumber Seed, but rounder, fuller, and harder. It is brought from *Aleppo*; and the beſt is white, dry, light, ſmooth, and intenſely bitter.

The Plant is called *Colocynthis fructu rotundo minor*, C. B. P. 313. It grows in the Iſlands of the *Archipelago*, and upon the Sea-Coaſts in the *Levant*.

In a chymical Analyſis, from two Pounds and ſeven Ounces of the Pulp of Colocynth without the Seeds, were obtained nine Ounces, ſeven Drachms and a Half of clear, inſipid, and inodorous Phlegm, yet containing ſome Portion of alkaline urinous Salt, foraſmuch as it made the Solution of corroſive Sublimate foul and a little milky. Afterwards three Ounces, two Drachms and a Half of reddiſh empyreumatick Liquor, reckoning both acid, and urinous; with one Ounce, ſix Drachms and a Half

of urinous Spirit; and three Ounces and twelve Grains of fœtid, bitter, acrid Oil.

The black Maſs left in the Retort, which was like a Coal, and quite void of Taſte, weighed ten Ounces, four Drachms and a Half; and being calcined in a reverberatory Fire eight Hours, there remained only four Ounces, two Drachms and a Half. From theſe, by Lixiviation, were got three Drachms and ſixty Grains of cauſtick Salt, purely alkaline, which in the Solution of corroſive Sublimate precipitated a Powder of a deep Saffron Colour. The Loſs of Parts in Diſtillation was about twelve Ounces and one Drachm; and in Calcination ſix Ounces and two Drachms.

The Principles afforded in this Analyſis, when they are mixed together, conſtitute a reſino-gummous Compound; that is, the alkaline Salt, which abounds in Colocynth, is joined with ſome Portion of acrid Oil into the Conſiſtence of a Gum, whilſt another middling Portion of Oil, with a little acid Salt, forms a Reſin; and from theſe, condenſated with Earth, ariſes an acrid reſino-gummous Compound, which *Mon. Boulduc* confirms by ſeveral Experiments, related in the *Memoirs* of the *Royal Academy* of *Sciences* for the Year 1701.

From eight Ounces of the Pulp of Colocynth, cleared of the Seeds, he obtained near three Ounces of a gummous Extract; and from the ſame Weight, half an Ounce of a reſinous Extract with Spirit of Wine. In the next Place, he macerated ſome of the Pulp a long Time in hot Water, whereby its gummous Subſtance was ſeparated, but could draw no Tincture from it afterwards; whereas, after he had macerated ſome Pulp in Spirit of Wine, and ſo taken out its reſinous Parts, he got by the Means of Water two Ounces of a gummous Extract. A Decoction of the Pulp, in Diſtillation, yielded a clear

clear Water, which had neither Smell nor Taſte, nor the leaſt Effect as a Cathartick: But four Ounces of it being infuſed in ſix Pints of Muſt, and ſet to ferment twelve Days, the fermented Liquor, in Diſtillation, gave up firſt eight Ounces of ſpirituous Liquor, ſmelling pretty ſtrong, and very bitter to the Taſte; then ſome Portions of a Fluid which was leſs bitter; and afterwards, a mere inſipid Phlegm. In the laſt Place, the Liquor which was left behind in the Alembick, being well ſtrained, and evaporated to a ſolid Conſiſtence, there remained a gummous Extract in the Quantity of two Ounces and a Half. But this Extract was not produced from the Colocynth alone, but in a large Proportion from the Grape-Juice.

One Ounce of the ſpirituous Liquor, being given to a Man of a ſtrong Habit of Body, occaſioned nauſeous and colick Pains without any ſubſequent Evacuation; though two Ounces wrought very powerfully, but with much griping. Ten Grains of the Extract operated very well, without any Violence or Corroſion of the Inteſtines. The reſinous Extract abovementioned purges little, but cauſes grievous Pains of the Belly. The gummous Extract in its Operation is more efficacious and gentle, yet rougher than the Extract of the fermented Pulp.

Laſtly, if we boil one Pound of the Pulp of Colocynth, without the Seeds, for ſix or eight Hours in twelve Pints of Spring-Water, and ſtrain off the Liquor with a ſtrong Expreſſion; then boil the Remainder for twelve Hours in the ſame Quantity of Water, and ſtrain; and ſo a third Time for fourteen Hours in eight Pints of Water, ſtraining as before, the *Fæces* remaining at laſt, will be ſcarce a Quarter of a Pound. Theſe Decoctions mixed all together, and evaporated to Half, after having

ſtood to cool, will thicken into a mucilaginous Maſs, like Glue; which by a further Evaporation becomes a ſolid Extract. This may be moiſtened with ſome aromatick eſſential Oil, and put by as the true and much the beſt Extract of Colocynth, being a gentle Cathartick from gr. iv. to xv.

Upon the whole we may conclude, that the Parts in this Drug, to which its purgative Virtue is owing, are of two Kinds (*viz.*) oily Parts, and acrid Saline. And theſe Principles are found, not only in Colocynth, but in other ſtrong Catharticks, ſuch as Tobacco, Hellebore, *&c.* theſe Subſtances abounding with an Oil, which is extremely acrid, and produces the moſt violent Irritation of the Nerves. Thus, for Inſtance, the leaſt Drop of the Oil of Tobacco, being let fall into a Wound in an Animal, Convulſions of the whole Body immediately follow, and the Animal very ſoon expires. Neither is this acrid Oil, which irritates the Nerves, contained only in the ſtronger Catharticks, but a great Number of bitter Vegetables are alſo found to be injurious to the Nerves; in ſome Animals, and in Birds eſpecially, bringing on Convulſions and Death, as appears from the Obſervations of *Wepfler*, in his Treatiſe *De Cicutâ Aquaticâ:* And the Bitterneſs of theſe Compounds depends chiefly upon an acrid Oil, as is evident from a Reſolution of them into their Principles.

Now to theſe oily Parts is owing, in a ſpecial Manner, the Action of the rougher Purgatives; for by theſe the nervous Membranes of the Inteſtines, and the Nerves of the other Bowels, are forcibly vellicated and ſhook; whence all the Glands of thoſe Parts, being ſtrongly compreſſed, ſqueeze out their Contents, and puſh them forward to the Inteſtines. To this End likewiſe, the other Principle which is found in purging Medicines, is conducive

ducive in no ſmall Degree; that is, their acrid ſaline Particles, both fixt and volatile: For theſe, entering the Mouths of the Veſſels, and circulating through them, are mingled with the Juices, which they diſſolve and melt down, ſo as to render the whole Maſs of Blood more fluid. Hence a more copious Afflux of Serum is derived from every Part of the Body to the Inteſtines, which at the ſame Time are ſtimulated by the oily Particles. And this is the Reaſon why ſtrong Catharticks provoke an Evacuation ſo plentifully by Stool.

But theſe oily Parts being condenſated in a large Quantity by an acid Salt, into a reſinous Concrete, and expanded upon the nervous Membranes, the Irritation they produce is too great; whence are excited Gripings of the Guts, or ſpaſmodick Twitchings, ſucceeded by very ſparing Diſcharges of a viſcid Matter by Stool, and ſometimes none at all. On the contrary, the acrid Salts, conſtituting the greater Part of the gummous Concrete in Combination with a few diluted oily Particles, do not irritate the nervous Coats, ſo much as they mingle with the Humours, and diſſolve them. However, as ſome Aſſiſtance from the reſinous Parts is neceſſary to ſtimulate the Inteſtines to throw off the Humours which have been diſſolved, it is therefore that purging Medicines exert their Action more effectually, when their Gum and Reſin are together, than when either the one or the other of them are given in a ſeparate State.

Moreover, theſe bitter oily Parts, which are found in great Quantity in Colocynth, and are ſo highly offenſive to the Nerves, whether they be condenſated into a Reſin by acid Salts, or by acrid Salts expanded into a Gum, or whether they be ſeparated from both theſe Kinds of Salts by Diſtillation, or by the Means of Fermentation ſubtilized

and changed into an ethereal Spirit; they ſtill retain the peculiar Nature which belongs to them, that is, their Bitterneſs and Property of irritating the Nerves, as appears from what has been above obſerved.

The Uſe of Colocynth in Medicine is as ancient as the Art of Phyſic, it being well known to *Hippocrates*, *Dioſcorides*, *Galen*, *Pliny*, and in fine both to the *Greeks* and *Arabians*. It is a ſtrong and violent Cathartick. It is commended by all Phyſicians for evacuating thick tough Humours, eſpecially ſuch as are pituitous, which they reckon that it draws from the remoteſt Parts, and the minuteſt Receſſes of the Body; inſomuch that *P. Ægineta* ſays, it purges the Nerves more than the Blood. It is greatly extolled in old and ſtubborn Diſtempers, when Agarick and Turpeth have proved ineffectual; as in Affections of the Nerves, Obſtructions of the Bowels, Head-Ache, inveterate Hemicrania, Apoplexy, Epilepſy, Giddineſs, Aſthma, Dyſpnæa, cold Diſorders of the Joints, Sciatick Pains, flatulent Colick, Dropſy, Leproſy, Scab; and in ſhort, ſays *C. Hoffman*, wherever an obſtinate Diſeaſe requires a churliſh Remedy. And he adds, after *Maſſarias*, that we ſeldom cure ſome of the worſt Diſeaſes, becauſe we never give over trifling with Lenitives. Beſides its purgative Virtue, Phyſicians ſeem to allow it a certain ſpecifick and merely alterative Quality: For *Scribonius Largus* commends it much for provoking the *Menſes*, removing Pains of the Loins, and curing Epilepſies; and *Helmont* tells us it is excellent in chronical Diſeaſes on Account of its reſolving Property.

Phyſicians likewiſe agree that Colocynth has a deleterious, or, at leaſt, a very dangerous Quality, whereby, it greatly diſorders the Stomach, Bowels, and the whole Body; is hurtful to the Nerves,

Nerves, ſometimes vellicating them with too much Violence; opens the Veins, bringing away Blood in the Stools, and corrodes the Inteſtines with grievous Pains of the Belly. Hence ſome would perſuade us to baniſh it entirely from the Shops, as a moſt pernicious Drug: But from theſe *Simon Paulli* diſſents, and accuſes them of being over timorous; becauſe (ſays he) many eminent Phyſicians, following the Practice of the Ancients, have uſed it with good Succeſs in ſtubborn Caſes. And indeed ſtrong Catharticks like this are moſt powerful Remedies; but provided always, that they be given in a proper Time and Manner. Wherefore *Symphorianus Campegius* adviſes young Phyſicians not to meddle with Colocynth, permitting the Uſe of it only to older Practitioners. Both the ancient and modern *Greeks*, as well as the *Arabians*, have tried ſeveral Ways to correct it; as by rubbing the Pulp in a Mortar to an *Alcohol* or extremely fine Powder; or by mixing it with Gum Tragacanth, Arabick, Maſtich, and other glutinous and aſtringent Subſtances. But *Dodonæus* rejects theſe Methods, as prejudicial; who ſuppoſes Colocynth may be corrected by joining other Purgatives with it. Some to moderate its Force make Choice of acid Liquors; ſome alkaline Salts, Fermentation, or Putrefaction: Some again make an Extract of it with Spirit of Wine, and others with Water. But after all, ſince this Drug is given not only to promote a gentle Evacuation, but oftentimes to work powerfully, thoſe Preparations which weaken too much its cathartick Force are altogether uſeleſs, and ought therefore to be rejected; and ſuch Corrections only, in my Opinion, are to be received, as are capable of extending its Subſtance; leſt, the groſſer Particles, adhering to the Membranes of the Inteſtines, ſhould too violently irritate, inflame,

or corrode the Parts. Thus, if your Intention be to purge ſtrongly, give the Pulp well divided by rubbing it in a Mortar, as it is commonly uſed in the Form of Troches; and it is evident from long Experience that it is entirely free from Danger, when given ſeaſonably and in a proper Doſe. It is likewiſe often an Ingredient with other Purgatives in a ſmall Proportion, to act as a *Stimulus* only with the reſt. If a Purge be required that may operate with greater Gentleneſs, but ſtill with equal Efficacy; in this Caſe, a Decoction of the Pulp in Water, an Infuſion in Wine, or an Extract prepared with Water, or with Muſt wherein ſome Pulp has been fermented, may be uſed with Succeſs. We muſt take Notice, however, that the Extracts are oftener ordered, than either the Decoction or Infuſion; becauſe, theſe being extremely bitter, are very ſeldom agreeable to the Patient: And the Extract with Spirit of Wine, as we have hinted above, purges leſs than the Pulp in Subſtance, and the Gripings attending its Operation are far more painful.

Dioſcorides propoſes the Pulp to be taken to the Quantity of four * *Oboli*, made into a Bole or Pills with Hydromel, boiled Honey, Myrrh, and Nitre; and for a milder Purge, he orders a Gourd of Colocynth to be ſcooped hollow, and ſome Hydromel, or Raiſin-Wine, which has been boiled in it, to be given in a Draught. The Method *Aëtius* followed was much the ſame: He took a Gourd of a proper Size, and opening it at Top ſcraped out the Seed, and then filling the Cavity with Grape-juice boiled, or ſweet Wine of a good Age, let them ſtand in Maceration a Day and Night; and after-

* The *Obolus* was the ſixth Part of an *Attick* Drachm, and in our Weight equal to about Half a Scruple.

wards

wards ſtraining the Liquor through a Rag, gave it to his Patient warm.

The Doſe of the Pulp, reduced to a ſubtile Powder, is from gr. v. to ℈j. and in Decoction or Infuſion from ℈ſs. to ʒj. But on Account of its Bitterneſs, as we have ſaid, it is preſcribed in theſe laſt Forms but ſeldom, and then the Liquor ought to be ſtrained very carefully. For a Clyſter it may be boiled to one Drachm, or in an Apoplexy to one Drachm and an Half or two Drachms. But here likewiſe we muſt remember to be very careful in ſtraining the Decoction, leſt ſome Pieces or Films of the Colocynth ſhould remain therein; which, according to the Obſervation of *Etmuller*, by adhering to the Coats of the Inteſtines, are the Cauſe of many direful Symptoms.

If from too large a Doſe of Colocynth a Superpurgation or Convulſions are brought on, or if we ſuſpect their Approach, the Way either to cure or prevent them, is to let the Patient drink plentifully of Oil, and to inject it by Way of Clyſter. This Medicine is ſeldom of Service in acute Diſeaſes, or to Perſons of bilious Temperaments, or whoſe Bowels are hot: In a Word, it is ſuitable Phyſick for ſuch only who are of an athletick Conſtitution and in the Flower of their Age; being adviſeable neither to Children, nor old People; nor eſpecially to pregnant Women, ſince it kills the *Fœtus* if it be uſed only as a Suppoſitory. The Troches made of it, which in the Shops retaining the *Arabick* Name are called *Trochiſci Alkandal*, are prepared thus.

Take of the beſt Colocynth Pulp, cleared from its Seeds. q. v. cut it ſmall with Sciſſars and rub it betwixt the Hands with q. ſ. of Oil of ſweet Almonds; then reduce it to a very fine or impalpable Powder in a Mortar, and make

make it up into ſmall Troches with a Mucilage of Gum Tragacanth in Roſe-Water. Theſe being dried in the Shade, are to be powdered again as before, and made into Troches in the ſame Manner; and ſo repeating the Proceſs a third Time let them be put by for Uſe. The Doſe is from gr. vj. to ʒſs.

It is cuſtomary with the Apothecaries of *Paris* to ſubſtitute theſe Troches for the crude Pulp in all officinal Compoſitions where Colcynth is ordered; and indeed their Practice herein is commendable.

Take of Colocynth-Pulp cut ſmall ʒſs. Infuſe in ℥vj. of white Wine, and let them ſtand to macerate a Night; then filter the Wine through Cap-paper, and diſſolve in it ʒj. of *Calabrian* Manna, for a purging Potion.

Take of the Troches of Colocynth gr. x. Scammony gr. vj. Electuary of Prunes q. ſ. Make a Bolus. Or,

Take of the Troches of Colocynth gr. vj. Powder of Jalap gr. xv. *Mercurius Dulcis* gr. x. Conſerve of Roſes q. ſ. to make a Bolus.

Take of the Extract of Colocynth gr. vj. waſhed Aloes ℈j. Saffron in Powder gr. viij. Syrup of Wormwood q. ſ. Mix and make a Bolus, to be given in a Suppreſſion of the *Menſes*.

Take of Colocynth-Pulp ʒiſs. Root of Pellitory ℥ſs. boil in q. ſ. of Water to ℥xij. to the ſtrained Liquor add of antimonial Wine ℥iij. Sal Gem ʒij. Make them into a Clyſter for ſleepy Affections and Apoplexies.

The cathartick Quality of this Drug is ſo remarkable, that being made into a Paſt with Ox-gall and applied to the Navel, it kills Worms in the

the Belly and expels them by Stool. Some alſo aſſert that it purges even by its Smell, or by holding it in the Hands. It is an Ingredient in many purging Pills and Extracts.

ARTIC. IV. *Of purging* CASSIA.

Caſſia ſolutiva, Caſſia Nigra, ſiliqua Ægyptiaca, Off. et Caſſia fiſtula, quorumdam: Eiar Xamber, Serap. Chairſander, Avicen. Κασσία μέλαινα, *Actuar. et Græcor. recentior.* Caſſia is an exotick Fruit or cylindrical Pod, a Cubit long and about an Inch thick, compoſed of a thin, hardiſh, woody Shell, which on the outſide is of a dark brown Colour, and yellowiſh within, having its Cavity divided into many Cells by thin woody Partitions, ſtanding tranſverſly and parallel to each other. In theſe Cells is included a ſoft, black, melleous Pulp, of a ſweetiſh, and ſomewhat acrid Taſte, with a flattiſh, oval, hard, ſmooth, cheſnut-coloured Seed between every Partition. In the Shops we meet with two Sorts; the one, *Oriental*, which is called *Caſſia Alexandrina*, or *Ægyptiaca*, being brought hither from *Egypt*; the other, *Occidental*, which being cultivated in the Iſlands of *America*, is imported in greater Quantities, and ſold at a lower Rate. The Bark of this is thicker, rougher, and more wrinkled, and the Pulp is acrid and nauſeous. On the contrary, the Bark of the other Sort is thinner and blacker; the Pulp alſo is ſweet and not unpleaſant; and is therefore preferable to the *Occidental*. The Pods are to be choſen heavy, freſh, and full, ſo as not to rattle upon ſhaking them. The Pulp within ought to be fat, of a ſhining black Colour, and ſweet; not acerb by Reaſon of its Immaturity, nor ſour by long keeping: Neither ought it to be too dry, nor too moiſt, nor mouldy. The Merchants have a Cuſtom

a Cuſtom of laying this Commodity in Wine-Cellars and ſuch like Places, or covering it with Sand, where they ſprinkle Water upon it to make the Pods appear fuller and freſher; whence it either grows ſour or mouldy very ſoon. To prepare it for Uſe, the Bark, Seeds, and woody Partitions are thrown away, and the Pulp is paſſed through a Sieve; after which it takes the Name of *Flos Caſſiæ*, or *Caſſia Mundata*.

The Tree which bears it is called *Caſſia Fiſtula Alexandrina*, C. B. P. 403. *Caſſia purgatrix*, J. B. T. S. 416. *Caſſia Nigra*, *Dodon. Pemptad.* 787. *Arbor Caſſiam Solutivam ferens*, *Bont. Conna*, *H. Malab.* T. S. *Quauhayohuatli* 2*d ſive Caſſia fiſtula*, *Hernand.* *Father Plumier* gives an accurate Deſcription of this Tree in his Manuſcript Hiſtory of *American* Plants, Vol. vii. Fol. 103. though it does not ſeem to be properly a Native of *America*, but to have been tranſplanted thither out of *Africa*, or elſe from the *Eaſt Indies*. It grows in *Egypt* and almoſt all the hot Provinces in the *Indies*.

In a chymical *Analyſis*, two Pounds, five Ounces and three Drachms of the Pulp of *Alexandrian* Caſſia, diſtilled in B. V. yielded ſix Ounces, five Drachms and twelve Grains of Phlegm, which was clear, almoſt inſipid, and had but very little Smell of Caſſia, yet afforded Marks of an acid Salt by changing the Tincture of Turnſole red: Then one Ounce, ſeven Drachms and an Half of Phlegm entirely void both of Smell and Taſte. The dry indurated Maſs remaining weighed twenty eight Ounces and four Drachms: Which in Diſtillation from a Retort, gave up ten Ounces and four Drachms of reddiſh acid Spirit; nine Drachms of Spirit, which was both acid and urinous; four Drachms and ſixty Grains of Spirit purely urinous; and four Drachms and forty ſeven Grains of thick empyreumatick

Oil. The Weight of the black Subſtance, that remained behind in the Retort, was ten Ounces, one Drachm and an Half; which after Calcination for twenty Hours, when it gave over ſmoking, left one Ounce and five Drachms of reddiſh brown Aſhes; from which were got ſix Drachms and twelve Grains of lixivial fixt Salt merely alkaline.

The Loſs of Parts in B. V. was four Drachms and twenty four Grains. In Diſtillation from the Retort four Ounces, and in Calcination eight Ounces, four Drachms and thirty ſix Grains went off in Flame and Smoke.

Further, the Pulp of Caſſia eaſily grows ſour; and being diluted with Water, and put up into a Caſk for ſeveral Months, lets fall an eſſential Salt perfectly reſembling Cream of Tartar.

By this *Analyſis* then it appears, that in the Pulp of Caſſia is contained a fine volatile acid Salt, which riſes the firſt in Diſtillation; and another which is more fixed, requiring a ſtrong Fire to force it over along with the Oil. With theſe are found a very little urinous Salt, and a middling Portion of Earth. Wherefore its Virtues are owing to a certain eſſential Salt like Cream of Tartar, but finer or leſs enveloped with Earth, and more tempered with ſmooth oily Particles.

Moſt Phyſicians agree that Caſſia is a mild and harmleſs Purgative, ſuitable to all Perſons, of whatever Age, Sex, or Temperament; as likewiſe to pregnant and Child-bed Women. Upon the Diſcovery of the Gentleneſs of this, and other ſolutive Medicines, the *Arabians* became bolder in the Practice of Purging, than the ancient *Greeks*, who were accuſtomed to uſe only the more violent Catharticks. It is advantageouſly preſcribed in ardent and inflammatory Fevers, in Affections of the Breaſt, Kidneys, and Bladder, and in all Inflammations,

mations, whether external or internal, when Purging is indicated; and is beneficial in thoſe Diſeaſes which other Catharticks would but irritate and increaſe.

It is not given as a Cathartick only in a large Doſe, but oftentimes is preſcribed as an Alterative in a ſmall Quantity, to be taken a long Time together; ſometimes to mollify the Belly when it is hard and dry, and to promote an eaſy Diſcharge of its Contents; or ſometimes to derive Humours, which flow preternaturally upon particular Parts, to the Emunctories of the Inteſtines, and there to expel them; as in long and ſtubborn Affections, ſuch as the Gout, Catarrh, Stone, Hemorrhoids, long Head-Aches, Hemicrania, *&c.* The *Egyptians* uſe the Pulp with Sugar-Candy and Liquorice, as a Secret againſt Diſorders of the Kidneys and Bladder: *Monardus* alſo and *Matthiolus*, following the *Egyptians*, reckon it an infallible Preſervative, as they call it, if three Drachms be taken every Day three Hours before Dinner.

Both *Meſue* and *Fallopius* inculcate, that no purging Medicine is more agreeable to the Kidneys and Bladder, than this. All Phyſicians however are not of the ſame Opinion; for *Pigræus* and *Fabricius Hildanus* affirm that it is offenſive to theſe Parts; and *Bellonius* relates, in his *Ephemerides*, that the Surgeons of *Paris*, who practiſed cutting for the Stone, obſerved it to be highly prejudicial to Perſons who had undergone the Operation. Nevertheleſs, we know from daily Experience, that ſuch have no Danger to fear from it, under a proper Adminiſtration. *Fallopius* indeed himſelf, who recommends it in Affections of the Bladder, informs us that a ſcalding Heat of Urine is to be excepted. Nor can we doubt, but that in great Inflammations of the Kidneys and Bladder, it may be

be hurtful, like other Catharticks, whereby in general these Diseases are augmented; forasmuch as they proceed either from a spasmodick Disposition of the Nerves, or of the Membranes, the Cause of which is the Attrition of calculous Bodies, or the saline vellicating Quality of the *Serum* offending the Ureters and Bladder. But if any Purge be necessary in these Cases, none certainly can be more innocent and useful than this.

Again, some find Fault with Cassia on other Accounts. They tell us, it relaxes the Tone of the Stomach, causes Gripings of the Belly, and produces Flatulencies: Wherefore they reckon it very improper for moist, hypocondriacal, or flatulent Stomachs; and that its Sweetness also renders it noxious in bilious Temperaments. But these Inconveniencies are easily obviated, by chusing the best Cassia, or that of *Alexandria*, fresh and perfectly ripe; for this occasions no Gripings. But the *American* Sort, the Taste whereof is less agreeable, sometimes proves a little painful in working; as does also the *Alexandrian*, when it is either immature, or grown sour by long keeping. Moreover if the Stomach be moist, and the Tone of its Fibres too lax, it may be mixed to good Advantage with Rhubarb. As it is a Medicine of a sweet Taste, and slow Operation, no wonder that it sometimes ferments and swells in the Stomach and Intestines, and produces Flatulencies: Which is yet an Inconvenience that is easily provided against, by substituting instead of the Pulp in Substance, a Decoction of it to be strained and drank warm; since thus it neither occasions Windiness, nor Belchings, nor continues so long in the first Passages. We must further add, that Melancholicks and hysterical Women have no need to be afraid of using it, from any Apprehensions of its exciting what

they commonly term Vapours; for, on the contrary, being mixed with Cream of Tartar, or boiled with Tamarinds, it will be found very beneficial to Perſons under ſuch Indiſpoſitions: And the ſame Management will render it entirely harmleſs in bilious Temperaments. Laſtly, as to its ſlow Operation, it may be made briſker by joining other Catharticks with it, as Scammony, Sena, Jalap, Manna; or likewiſe antimonial Emeticks, which are added to it as a *Stimulus*, or the Caſſia is mixed with them to qualify their Force. Thus, in a Pleuriſy, Peripneumony, and other inflammatory Diſeaſes, whenever an Emetick or Cathartick is proper, this Medicine is of extraordinary Service. It alſo does Wonders in a painful Tenſion of the *Abdomen*, which ſometimes ſucceeds an injudicious Adminiſtration of Antimonials. In this Caſe it ought to be ordered in a liquid Form, to ſerve the Patient inſtead of all other Liquors, except a little Broth that may be taken now and then between Whiles.

Many Phyſicians of Credit aſſure us, that the Pulp of Caſſia is effectual for preſerving new-born Children from the Small Pox, by voiding the thick Matter which ſtagnates in their Inteſtines. For this Purpoſe two or three Drachms are diſſolved in ſix Ounces of Veal-Broth, or Whey, and the whole is given by Spoonfuls in about eight or twelve Hours, before the Child is put to the Breaſt.

This Pulp is preſcribed from ʒij. to ʒiſs. in the Form of a Bolus, or diſſolved in Liquors; and in Decoctions from ʒſs. to ʒiv. to be drank, or injected by Way of Clyſter.

Take of the Pulp of Caſſia freſh drawn ʒj. Rhubarb powdered ℈j. Cream of Tartar ʒſs. Mix and make a Bolus to be taken in Wafers on an

an empty Stomach, drinking ſome Veal-Broth after it. Or,

Take of the Pulp of *Egyptian* Caſſia ʒvj. *Cornachine*'s Powder ℈j. Make a Bolus.

Take of the Pulp of Caſſia ʒj. Syrup of Violets, or Peach-Flowers, ʒj. diſſolve them in ʒvj. of Whey for a Potion. Inſtead of Whey may be uſed a pectoral Ptiſan, or Tincture of Sena, Decoction of Tamarinds, *&c.*

Take of the Pulp of Caſſia, with the Stones, ʒiij. *Calabrian* Manna ʒij. Boil gently in ℥xij. of a pectoral Decoction: In the ſtrained Liquor diſſolve ʒj. of the compound Syrup of Apples, or gr. vj. of emetick Tartar: Let it be divided into two Draughts, to be taken at the Diſtance of four Hours, ſome Broth being drank in the Interval.

Take of the Pulp of Caſſia freſh drawn ʒiij. Tamarinds ʒiſs. Boil them gently in ℔ij. of Whey, to be ſtrained and taken by Glaſsfuls.

Take of the Pulp of Caſſia ʒj. Honey of Violets ʒij. diſſolve in ℔j. of an emollient Decoction for a Clyſter.

Sometimes Caſſia is uſed outwardly, the freſh Pulp being ſerviceable to the Piles, if external, in the Form of a Cataplaſm, or if internal, diluted with warm Milk and injected. It is likewiſe commended, externally applied, for Inflammations of the Liver, and Pains in the Joints.

In Perfumers Shops, and the Cabinets of Virtuoſoes, we meet with another *Species* of Caſſia, which is called *Caſſia Braſiliana.* The Pod of this Sort is much thicker than the *Egyptian*, ſomewhat flat, and extremely hard. It is imported from *Braſile*, and the Tree is diſtinguiſhed, *Caſſia fiſtula Braſiliana*, C. B. P. 403. *Tapyracoaynana Braſilienſibus, Piſon.*

Piſon. et Marcgrav. Caſſia fiſtula Braſiliana flore incarnato, Breyn. Cent. 1. *Cap.* 21. The Pulp of this, before it is ripe, is aſtringent, but afterwards purgative like the other, as *Piſo* and *Tournefort* have obſerved. *Lobelius* and *Caſp. Bauhine* aſſert even that one Ounce purges more than two of *Egyptian* Caſſia: Whence we may gather, that *Johnſon*, in his *Dendographia*, very improperly calls it *Caſſia fiſtula non purgans Braſilienſis*. Indeed *Marcgrave* alſo aſcribes to it only an aſtringent Virtue, but he probably made Trial of it when the Fruit was immature.

ARTIC. V. *Of* TAMARINDS.

Tamarindi, Off. Tamarhendi, Arab. Ὀξυφοινίξ, *Actuar. et Græcor. recentior.* Theſe are a Fruit in Figure and Size reſembling the Pod of a Bean, with three or four Protuberances, and covered with two Huſks or Barks; whereof the external is thickiſh, of a yellowiſh brown Colour, and brittle like an Egg-ſhell; the internal is of a green Colour, and thinner. The *Diploë*, or Interſtice between theſe Barks, is full of a ſoft, blackiſh, acid, vinous, and ſubacrid Pulp. The medullary Subſtance, or Pulp of the Fruit, is brought to us in a thick viſcid Maſs, with a Mixture of Membranes, Strings, or Fibres, and Pieces of the Bark; containing alſo hard, ſhining, cheſnut-coloured Stones or Seeds, larger than thoſe of Caſſia, almoſt quadrangular, and flat. This Pulp ought to be freſh, fat or clammy, of a blackiſh red Colour, ſour, juicy, and not adulterated with Prunes; and before it is uſed ought to be cleared from the Membranes, Fibres, and the like. It is brought to us from *Egypt*, and the *Indies*: Whence the *Arabian* Name *Tamarhendi*, which ſignifies an *Indian Fruit*. The ancient *Greeks* were not acquainted with it.

The

The Tree is called *Tamarindus*, *Raii Hiſt.* 1748. *Siliqua Arabica, quæ Tamarindus*, C. B. P. 403. *Tamarindus Detelſide appellata*, *P. Alpin. de Plan. Ægyp.* 351. *jutay, ſive Tamarindus*, *Piſon.* 157. *Tamarindus Marcgr.* 1071. *Balam-pulli ſive Maderampulli*, *H. Malab.* T. S. It grows in *Egypt*, *Arabia*, the *Indies*, *Ethiopia*, and that Part of *Africa*, which is called *Senega*. In hot Seaſons this Tree ſometimes gives out a glutinous, acid, and reddiſh Subſtance, which afterwards becomes white and hard like Cream of Tartar.

From the ſour Taſte of Tamarinds, it is evident they are plentifully ſtocked with acid Salt: Which is alſo proved by their *Analyſis*, wherein ſcarce any alkaline Salt is obtained; but, beſides the acid, a large Proportion of Oil. Six Pounds being diſſolved in eight Pints of common Water, and having ſtood for two Months, ſix Drachms of an eſſential Salt were found ſticking to the Sides of the Caſk, and after a longer Time the Quantity was greatly augmented. This Salt differs not from Cream of Tartar, having an acid Taſte, and being only ſoluble in boiling Water. Again, after they have been macerated for ſome Days, an acid Spirit is drawn from them in Diſtillation, not unlike the Spirit of Vinegar. Hence it appears that they abound with acid Salt, and Sulphur; yet ſo, that the acid predominates: Whereas in the Pulp of Caſſia the Sulphur is more copious than the Acid.

The *Turks* and *Arabians*, according to the Relation of *Bellonius*, when they ſet out upon long Journeys in the Summer, or are to paſs over the Deſerts of *Arabia*, lay in a Proviſion of Tamarinds; which they uſe only to ſlake their Thirſt, and not as Phyſick. For the ſame End they likewiſe preſerve the Fruit or Pods in Honey, or Sugar, as well when they are ſmall and green, as when larger and come to Maturity.

The *Arabians* in general account them purgative, though ſome Writers would deny that this Virtue belongs to them; who perhaps never experienced their Efficacy in a ſufficient Doſe. We muſt indeed acknowledge that they are exceedingly mild; and with their ſolutive Virtue have a gentle Reſtringency, which is found in few other Catharticks. They likewiſe temper the Acrimony of the Humours, allay Heat of the Blood and Bile, cure acute, ardent, and peſtilential Fevers, and the Jaundice, extinguiſh Thirſt, Heat of the Stomach, Liver, and other Bowels, and ſtop Vomiting. Common Practice has confirmed their Uſefulneſs in the Hemorrhoids, Inflammations, Dropſy ariſing from Inflammation, bilious Looſeneſſes, Diſeaſes of the Kidneys, and alſo in a *Gonorrhœa*; which is proved by the Obſervation of *Fallopius*, who gave them in this Diſeaſe with Succeſs.

Further, beſides the purgative Virtue inherent in themſelves, they are good Correctors of the ſame Property in ſome more acrid Subſtances; ſuch as Scammony, the Spurges, Spurge-Laurel, *&c.* for the ſaline, acrid and oily Parts of theſe are ſaturated, fixed, and rendered leſs active, by the eſſential acid Salt of the Tamarinds. On the other Hand, ſweet Medicines, which operate ſlowly, as Caſſia, and Manna, are rendered quicker, and their fermentative Quality is reſtrained, by reaſon that Acids are leſs diſpoſed to effervescence. Antimonial Emeticks are not corrected by Tamarinds, as ſome imagine; for this, and all other vegetable Acids, are obſerved to augment their Force: Which, on the contrary, by mineral Acids, is either weakened or totally deſtroyed.

In ſome Diſeaſes Tamarinds are accounted ſpecifick, as in ardent and putrid Fevers, Scurvy, Diabetes, Diſorders in Children from Worms, and the

the Jaundice. In this laſt the *Indians* give a ſimple Medicine, made only of Tamarinds, Caſſia, and Sugar. In ſcorbutick Affections they are preſcribed to Advantage, not only to purge, but to prevent the Diſſolution of the Humours, and blunt their Acrimony: But in Coughs, Coldneſs of the Stomach, Ulcers of the Guts, and Dyſenteries, theſe like all other Acids are prejudicial. The Doſe of the Pulp, cleanſed from the Membranes, Stones, *&c.* and paſſed through a Sieve, is from ʒij. to ℥j. in Subſtance, and to ℥iij. in Decoction or Infuſion.

Take Tamarinds and Pulp of Caſſia ā ʒſs. Powder of Rhubarb gr. xxx. Make a Bolus.

Take of the Pulp of Tamarinds, well cleanſed, ʒſs. Scammony in Powder gr. xij. Make a Bolus.

Take of fat Tamarinds ʒij. Whey ℔ij. Boil them gently, and in the ſtrained Liquor diſſolve ʒij. of the Syrup of Violets. A Glaſsful of this may be taken now and then to quench Thirſt in Fevers, or to calm the Heat of the Blood, or Bile.

ARTIC. VI. *Of the* LEMON.

Limon, ſive Malum Limonium, Off. This Fruit is ſo well known that it would be needleſs to deſcribe it.

The Tree which bears it is the *Malus Limonia acida*, C. B. P. 436. *Limonia Malus*, J. B. 196. It grows in *Italy* and *Spain*, and is planted in Gardens in the ſouthern Parts of *France*.

Lemon-Juice has a ſharper, or more acid Taſte, than the Juices of the Orange and Citron, and therefore is probably more cooling than either. It

quenches the Thirſt in Fevers, moderates the Heat, reſtraining the Effervescence of the Bile and Blood, and repairs the Strength and Appetite. In malignant and peſtilential Fevers, as alſo againſt certain Poiſons, it is ſometimes preferable to *Venice* Treacle, Mithridate, and all other Alexipharmacks. It is likewiſe an excellent Remedy in the Scurvy, and being often rubbed upon the Gums, in a ſhort Time removes their ſcorbutick Putrefaction. Moreover, Lemon-Juice has a diuretick Virtue, by which it expels Gravel and gives Relief in nephritick Complaints. It alſo ſtops Vomiting when occaſioned by bilious Humours, and is good in melancholick and hypochondriack Affections. A Syrup is prepared from it in the Shops, which is commended againſt the Stone, and Obſtructions of the Kidneys: Likewiſe againſt Thirſt and Heat in ardent Fevers. It ſtrengthens the Heart and Stomach, and allays the Effervescence of Bile; and therefore is given with Succeſs in ardent Fevers attended with Weakneſs, fainting Fits, Vomitings, and Hiccups.

The Peel is accounted cardiack and ſtomachick, but is ſeldom preſcribed, unleſs candied. A fine light eſſential Oil is drawn from it, which is uſeful to mix with purging Extracts, or, being joined with Sugar into an *Elæoſaccharum*, to diſſolve in cardiack and ſtomachick Juleps.

Take of purified Nitre ʒj. white Sugar ℥iv. Cochineal gr. xvj. Boil them in ℔iiſs of Spring-Water to Deſpumation; then letting the Decoction ſtand to ſettle, decant it clear, and ſqueeze into it the Juice of a Lemon. This is a pleaſant and uſeful Liquor to drink in ardent, bilious, malignant and peſtilential Fevers.

Take of the Root of Horſe-Raddiſh, freſh, and cut ſmall, ʒij. the Leaves of Scurvy-Graſs P. j. Raiſins ſtoned N°. vi. and one Lemon, with the Bark, ſliced. Let them macerate without Heat in white Wine and common Water, ā ℔j. for 24 Hours in a Glaſs-Veſſel cloſe ſtopped, ſhaking it now and then about. Pour the Liquor off, and uſe it as common Drink in the Scurvy.

Take of the diſtilled Water of Pellitory of the Wall ʒiv. to which add Oil of ſweet Almonds and Syrup of Lemon-Juice ā ʒj. Make a Draught to be given in nephritick Diſorders.

ARTIC. VII. *Of the* SEVILLE ORANGE.

Malum aurantium, ſive Aurantium Hiſpalenſe, Off. This Fruit is as well known to every Body as the former, and therefore a Deſcription of it would be equally ſuperfluous.

The Tree which produces it is the *Malus aurantia fructu acido, Off. Malus aurantia major*, C. B. P. 436. It grows in *Italy*, *Spain*, and *Portugal*; as alſo in the *Iſles d'Hieres* upon the Coaſt of *Provence*.

The Juice of the *Seville* Orange is cooling, extinguiſhes Thirſt, and abates the Heat and Effervescence of the Blood and Bile, and therefore is uſeful in Fevers. It is peculiarly efficacious againſt the Scurvy: inſomuch that the *Dutch* Sailors, when they have made long Voyages to the *Eaſt Indies* or other remote Climates, where they generally contract the Scurvy, after they arrive at *Portugal* and can procure a ſufficient Quantity of this Fruit to eat, are entirely cured of the Diſeaſe in a very ſhort Time. Being mixed with Water and Sugar, it makes an agreeable cooling Liquor, which is called

Orangeat

Orangeat or *Orangeade*. It is prescribed to ʒj. or ʒij. diluted in the Form of a Draught.

The Peel strengthens the Stomach, helps Digestion, divides and attenuates thick and tenacious Humours, discusses Wind, assuages colick Pains, provokes the *Menses* and *Lochia*, and kills Worms. It is accounted by some a Specifick in an Ischury and Dysury. It is given from ϑj. to ʒj. in Powder. The essential Oil, which is obtained from it either by Distillation or gentle Expression, is given in the same Disorders, in the Form of an *Elæosaccharum*, from gutt. ij. to iij. This Peel is likewise used in Tincture, and candied with Sugar, and a Syrup is prepared from it in the Shops.

ARTIC. VIII. *Of the* POMEGRANATE.

Granatum sive Punicum Malum, Off. The Pomegranate is a Fruit almost globular, but here and there somewhat compressed, of different Magnitudes, commonly about the Bigness of a large Apple, with a Crown on its upper Part. The Bark is moderately thick, and, as it were, coriaceous, yet hardish and brittle; before the Fruit is ripe green and smooth, afterwards of a scarlet Colour and rough, and at length changing browniſh; within something yellow, of an astringent Taste, containing a great Number of *Acini*, as they are called, disposed into distinct Cells, which in some are of an intense red Colour, in others purple, and full of a sweet, acid, or vinous Juice. Each of these *Acini* usually includes a single oblong Seed or Grain, like a Grape-Stone, consisting of a woody Bark, and a bitter astringent Kernel.

The Tree is called *Malus Punica sativa*, C. B. P. 438. *Punica quæ Malum Granatum fert*, *Cæsalpin.* 141. J. R. H. 636. *Malus Punica*, J. B. 1. 76. *Raii Hist.*

Hiſt. 1462. *Malus Granata ſive Punica*, *Tabern. Icon.* 1033. It grows in *Spain*, *Italy*, *Provence*, and *Languedoc*. The Flowers of this Tree, and the *Acini*, Juice, Kernels, and Bark of the Fruit, are uſed in Phyſick *. *Dioſcorides* calls theſe Flowers κύτινοι or *Cytini*, to diſtinguiſh them from thoſe of the wild Tree which are called Balauſtines; but the ſame Word is uſed by *Theophraſtus* to ſignify only the *Calyces* of Pomegranate-Flowers in general. The Bark of the Fruit, which was the Σίδιον of the *Greeks*, is called in the Shops *Malicorium*. *Pliny* tells us that the common People were acquainted with a Method of making Leather with it; whence (*viz.* from the Word *Corium*) Phyſicians termed it *Malicorium*.

Pomegranate-Bark yielded in Diſtillation an acid Liquor, another intenſely auſtere, and a little alkaline or urinous Liquor, with a large Proportion of Oil. The black Coal, which remained in a large Quantity, being calcined for thirty Hours, continued ſmoking, and the *Reſiduum* always retained a dark brown Colour; from which was got a moderate Quantity of fixt alkaline Salt, and a copious Earth. But this brown Earth ſeems to me to be chiefly a Portion of Oil, ſo greatly concentrated and fixt as to reſiſt the Action of Fire: And the Stypticity of acerb and auſtere Subſtances, in my Opinion, is not owing ſo much to a certain porous and aſtringent Earth, as to a certain acid Salt, which is ſo fixt, as not to be raiſed by the Force of Fire but with the greateſt Difficulty. This Salt is uſually compared to the vitriolick Acid; and not without Reaſon, ſince the vitriolick Acid is the moſt fixt of all others, as we find by Ex-

* They are all aſtringent, and ſerviceable in Fluxes and Hemorrhages; but the Bark or Rind of the Fruit is the only Part uſed in the *Engliſh* Shops.

perience

perience in distilling Vitriol. Nor is this Fixity, if we may so term it, to be ascribed to an astringent Earth in Iron or Copper; because the same Salt is still more fixt in vitriolated Tartar, in *Glauber*'s Salt, and Alum, wherein it is combined with a fixt Alkali, the absorbent Earth of Sea-Salt, and a calcarious Earth, from which it is not to be separated by the Force of Fire. Moreover, if the vitriolick acid Salt be joined with Oils, or likewise with Spirit of Wine, and the Mixture be digested a sufficient Time, they are at length so intimately united that they form a resinous Mass, whereof the greater Part is converted by Fire into a black Earth, extremely fixt, and void both of Taste and Smell. Therefore the acerb austere Taste appears to me to depend chiefly upon the like Combination of this Acid with Oil: But of this elsewhere.

The Bark of the Pomegranate has a bitterish, austere Taste. It is very astringent, and on Account of this Property is useful in preparing or tanning Hides, wherein it may be employed to the same Purpose as Oak-Bark; and forasmuch as it turns the Solution of green Vitriol black, it may serve instead of Galls to make Ink. It is efficacious in Loosenesses, Dysenteries, and all Fluxes of the Belly, in Hemorrhages, the *Fluor albus*, and *Gonorrhœas*; provided nevertheless that it be given cautiously, and not too soon. It powerfully strengthens the Tone of the Parts, whence it often produces contrary Effects: For *Bartholin* gives an Account of a certain Woman, who, by taking Pomegranate-Bark, was cured of a Suppression of her *Menses*; and we have before observed the same contrary Effects of opening and astringing in the Use of Chalybeates. *Constantius* asserts that a Decoction of this Bark with Wine kills Worms in the Belly, particularly those which are called *Ascarides*.

It

It is prescribed in Powder from ʒs. to ʒj. and in Decoction to ℥ss. It is likewise used in Gargarisms, and astringent Clysters.

ARTIC. IX. *Of* AMOMUM.

Amomum racemosum, *Off.* Ἄμωμον, *Dioſc. et Gal.* Βότρυωεν ἄμωμον, *Andromach.* Βότρυς ἄμωμον, *Damocrat.* *Amomum*, *Plin.* *Hamemis aut Hamama*, *Arab.* The true Amomum, as we find it in the Shops, is a dry Fruit which grows in small Bunches, ten or twelve roundish, membranaceous, brittle Pods, about as big as common Grapes, standing without Foot-stalks upon one common Twig, and pressing close upon each other. The Twig is slender, an Inch or two long, and furnished with many thin fibrous Leaves of different Lengths; the shorter being distributed in a Series over the Twig, like Scales. The longer Leaves, which are about equal to Half an Inch, encompass the Fruit, fix and fix together, forming about each Pod a Kind of *Calyx*. The Pods are of a pale Colour, white, or palish with a Cast of red, having at their Point a small Protuberance, and some fine Threads or Nerves drawn like Lines through their Length; with three Furrows, and as many Eminencies between them, corresponding to three Rows of cornered Seeds contained within. These are separated by a thin Membrane, which likewise affords a particular Cover to each Seed. The Seeds in the three Orders are so closely ranged, that they exhibit the Appearance only of three long entire Seeds. Externally they are of a dark Colour, internally white, of an hard Substance, yet brittle, being more easily broken than Cardamom-Seed. The Bunches have a fragrant Smell, something like common Lavender, but sweeter. The Seeds separately

rately have a ſtronger Smell, and a more acrid hot Taſte, ſomewhat reſembling the Taſte of Camphore. The Pods ought to be choſen inclining to red, for it has been obſerved that the Seeds of the white or pale-coloured Pods are ſeldom good.

This is evidently the Amomum of the Ancients, which is eaſily proved by comparing it with its Deſcription in *Dioſcorides*. In later Ages it continued for a long Time unknown, till *Cechinni Martinelli*, an Apothecary of *Verona*, as *Nicolas Maronea*, or *Marogna*, in a learned Treatiſe on this Subject tells us, brought it again to Light.

Botanical Writers have been ſurprizingly divided in their Opinions concerning the Plant which bears the true Amomum, ſcarce two of them agreeing upon the ſame; but all their Aſſertions on this Head have been learnedly refuted by *Maronea*. We have yet no Deſcription of the Plant in any Author. Some ſuppoſe it to be the firſt *Species* of *Elettari*, or the Cardamom-Plant, deſcribed in the *Hortus Malabaricus*. But we may obſerve a great Difference between the Fruit of this *Elettari* and Amomum; ſince Cardamom or the Fruit of *Elettari* ſeems to be placed beneath the *Petala* of the Flower, and, conſequently, to have been the *Calyx* of the Flower: On the contrary, the Pods of Amomum are contained within the *Petala* of the Flower or Leaves of the *Calyx*, and therefore ariſe from the Piſtil of the Flower. We may therefore reaſonably conclude that the Plants producing Cardamom and Amomum are of different Kinds. Beſides, the Pods of Cardamom have each a proper Foot-ſtalk by which they hang together in Bunches, but thoſe of Amomum adhere immediately to one common Stalk.

George Camelli, in the *Philoſophical Tranſactions of London*, propoſes a certain Plant which grows in the

the *Philippine* Iſlands, under the Name of *Tugus*, for the true Amomum of *Serapio*; but his Deſcription of it is ſo inaccurate, that we may juſtly doubt whether it be the true Amomum, or a particular *Species* of Cardamom.

Amomum abounds with a thin, volatile, aromatick, eſſential Oil, which it yields in Diſtillation, if it be previouſly macerated in Water. By Virtue of this aromatick Oil, it reſiſts Poiſons, attenuates thick Humours, increaſes the Motion of the Blood, raiſes the Spirits when languid, reſtores the Oſcillation of the Fibres, and helps Digeſtion. It is alſo diaphoretick, and provokes Urine and the *Menſes*. It is an Ingredient in *Venice*-Treacle *. Among the Ancients it was chiefly uſed in Unguents.

ARTIC. X. *Of* CARDAMOM.

We ſhall perhaps find nothing in the whole *Materia Medica* which is the Subject of more Diſpute than Cardamom. The Writers of all Ages, *Greeks* and *Arabians*, Ancients and Moderns, ſeem to have had different Notions concerning it. The older *Greeks* have taken Notice but of one Kind of Cardamom. *Pliny* makes four Kinds. *Avicenna*, among the *Arabians*, reckons two; one, which he calls *Cacula* or *Cacule*; another, *Cordumemi*: To this he attributes the ſame Virtues which *Dioſcorides* attributes to *Cardamom*. He makes two *Species* of *Cacula* (viz.) the greater and the leſſer. He likewiſe ſpeaks of *Helbua* or *Hilbua*, and *Chairbua*, by which Words

* It being very rarely to be met with, its Place is generally ſupplied by the Seed of the *Amomum vulgare* or common Amomum, which *Caſpar Bauhine* calls *Siſon quod Amomum Officinis noſtris*. This, according to Mr. *Miller*, *Botan. Officin.* p. 31. is a little ſtriated Seed, about the Bigneſs of Parſley Seed, of a pleaſant, hot, ſpicy Smell and Taſte, ſomething like a Nutmeg.

ſome

ſome Authors ſuppoſe is meant Cardamom, or, at leaſt, Meleguette. *Serapio* treats of Cardamom under the Name of *Cacula*, and diſtinguiſhes two *Species:* The greater he calls *Hil* or *Heil*; the leſſer, *Hilbane*, *Hilbave*, or *Hilbua*. All the modern *Greeks* interpret the *Cacula* of the *Arabians* by the Word Καρδάμωμον; and *Myrepſus* alſo, after the *Arabians*, frequently mentions the Καρδάμωμον μέγα καὶ μικρὸν, the great and the ſmall Cardamom.

Hence we may infer, that the *Arabians* and modern *Greeks* were acquainted with two *Species* of Cardamom. Moreover, from what may be gathered from *Dioſcorides*, *Galen*, and *Paulus Ægineta*, we may conclude, that what was uſed under this Name by the ancient *Greeks* was the ſame with our leſſer Cardamom.

Matthiolus ſpeaks of three Sorts of Cardamom, which at this Time are found in the Shops *(viz.)*
1. *Cardamomum majus*, the greater Cardamom;
2. *Cardamomum medium*, the middle Cardamom;
3. *Cardamomum minus*, the leſſer Cardamom.

1. *Cardamomum majus*, *Matthiol. Fructus Longouze*, *Steph. de Flacourt*, *Hiſt. Inſul. Madagaſc.* This is a dry Fruit of an oblong Figure almoſt like a Fig, and about the ſame Bigneſs, with a broad circular Crown divided into three Sections on its upper Part. The outſide Covering is thin, membranaceous, tough, and fibrous, marked with *Striæ*, or Furrows, running along it, and of a brown or reddiſh Colour. It is divided within into three Cells, containing a great Number of uneven, ſhining, reddiſh Grains or Seed, which are ſeparated and covered by ſeveral Membranes intermixed with them. Some Writers have called them *Meleguettæ*, from their reſemblance to the *Millium indicum*, which *Matthiolus* tells us goes among the *Italians* by the Name of *Melega*. They have a quick aromatick

matick Taſte, ſomething like Camphore, Lavender, and Thyme, and an agreeable ſweet Smell. Hence ſome have termed them *Grana Paradyſi*, or Grains of Paradiſe.

Matthiolus ſuppoſes the officinal Meleguette to be the Seed of this Fruit, which is taken out of the Pods and brought to us. But *Cordus* is of another Opinion; for Cardamom-Seeds, ſays he, have a quick and agreeable Taſte, without any burning Acrimony upon the Tongue; and Meleguette, on the contrary, is extremely hot and acrid like Pepper. And indeed their Difference in Taſte is conſiderable, Cardamom being leſs acrid and more aromatick, approaching to the Taſte of Lavender and Camphore. However, the Pods of Meleguette, as *Cordus* himſelf acknowledges, bear a great Reſemblance to the greater Cardamom, being full of Seeds like that, and commonly about the Bigneſs of an Egg: We are therefore of Opinion that it ought to be ranked under the ſame *Genus*, and may be called, in order to diſtinguiſh it from the true Sort, *Cardamomum majus Semine piperato.* In the Shops it is called *Meleguetta* or *Maniguetta*; by ſome Authors *Grana Paradyſi* *, and is the *Mellegetta ſeu Cardamomum piperatum* of *Cordus*. It is a ſhining ſquare-cornered Seed, leſs than Pepper, of a reddiſh brown Colour on the Surface, and white within, having an acrid, hot and burning Taſte, like Pepper and Ginger, being alſo not unlike them in Smell. It is imported in large Quantities, and ſerves inſtead of Pepper for ſeaſoning Food; and ſometimes is falſely ſubſtituted in Medicines for Cardamom-Seed. It grows in *Africa*, *Madagaſcar*, and the *Eaſt Indies*, from which Places it is brought by the *Dutch*.

* By this Name it is generally ſubſtituted in our Shops for the true *Cardamomum majus*.

2. *Cardamomum medium*, *Matthiol. Cardamomum majus*, *Bontii*. This is an oblong, ſlender, three-cornered Fruit or Pod, an Inch or an Inch and an half long, marked with *Striæ*, ending obtuſely at the Top, of an aſhy Colour, hard to be broken, and containing in three Cells a large Quantity of oblong, flat, angular Seeds: Theſe are wrapped up in very thin white Membranes, and divided through the Middle on one Side by a ſmall Furrow, which is interſected by many tranſverſe Lines. They are of a reddiſh white Colour, and their Subſtance is white, acrid, and aromatick. This Sort ſeldom comes to us.

The Plant is like that which bears the leſſer Cardamom, of which we ſhall now ſpeak; only that it grows ſometimes higher, and has larger Leaves.

3. *Cardamomum minus*, *Matthiol. Cardamomum veterum Græcorum. Cardamomum ſimpliciter in Officinis dictum*, C. B. P. This alſo is a dry Fruit, or ſhort triangular membranaceous Pod, about five Lines in length, blunt at the upper Extremity, and ending more in a Point towards the Stalk, of a pale reddiſh Colour, and ſtriated as the former. The Huſk is much thinner than in the *Cardamomum medium*, and when it is fully ripe opens at the Corners. Within it is uſually divided into three Cells by fine Membranes which are eaſily lacerated. In each of theſe Cells are found two Rows of cornered rough Seeds, of a reddiſh yellow Colour, and white in their internal Subſtance. They have an acrid, bitteriſh, aromatick, and, as it were, camphorated Taſte. Many Pods are ſometimes found hanging by ſlender Pedicles upon one common Stalk; whence we may learn that they grow upon the Plant in Bunches. They are brought from the *Eaſt Indies*.

Some *Species* of Cardamom like the preceding but leſs are imported to us mixed with it. They are perhaps the imperfect or abortive Fruit of the ſame Plant, or ſome others like it: Of this Sort is the *Cardamomum minus*, C. B. P.

The Plant upon which the leſſer Cardamom grows is imperfectly deſcribed by *Bontius*, but with much greater Accuracy in the *Hortus Malabaricus*, Vol. II. The learned Botaniſt *Paul Herman* reduces this Plant to the ſame Claſs with Turmerick, Galengal, Zedoary, Ginger, *&c.* And it may therefore be ranked under the *Genus* of *Cannacorus*, J. R. H. It is called *Elettari*, *Hort. Malab.* 11. 9. where we find it diſtinguiſhed into three *Species*, the firſt of which many ſuppoſe to be the true officinal Amomum; though falſely, as we have made appear in the former Article. Theſe Plants grow in many Parts of the *Eaſt Indies*. I have likewiſe ſeen a *Species* of Cardamom from *China*, which the *Chineſe* call *Tſao-Keou*. The Pods are much larger and rounder than thoſe of the leſſer Cardamom.

The ſeveral *Species* of Cardamom abound with an aromatick eſſential Oil, which they yield by being macerated in Water, and afterwards diſtilled.

The leſſer Cardamom is moſt frequently uſed in the Shops; the Bark or Huſk being generally ſeparated from the Grains and thrown away. It ought to be freſh, with a Huſk of a pale Colour on the outſide, well cloſed, and full of ſound, reddiſh brown, odorous, acrid, and aromatick Seed.

It helps Concoction, fortifies the Stomach and Brain, provokes Urine, and the *Menſes*, and is recommended by ſome to prevent Apoplexies and Giddineſs. The Doſe in Subſtance is from ℈ſs. to ℈j. and to ʒſs. in Infuſion.

ARTIC. XI. *Of* CUBEBS.

Authors have diſputed much concerning Cubebs, ſome aſſerting they were known to the ancient *Greeks*, others denying it. The former build their Aſſertions upon the Authority of *Avicenna* and others of the *Arabians*, who have aſſigned to Cubebs whatever *Galen* had ſaid of Καρπήσιον, as if they were the ſame, notwithſtanding we may learn from *Galen* himſelf, that *Carpeſium* was no Fruit, but either a Branch or twiggy Root. This (to omit others of the like Nature) is ſo obvious a Blunder, that it is reaſonable to conclude, till better Authority to the contrary be produced, that Cubebs were entire Strangers to the Ancients. But leaving this Controverſy, we proceed to treat of the Cubebs which are now found in the Shops.

Cubebæ Vulgares, *Off.* *Cubebæ* or *Quabebæ*, *Arab.* They are a dry Fruit, or ſpherical Grains, like Pepper, but ſometimes a little larger, having a long ſlender Foot-Stalk, and a browniſh gray Bark which is full of Wrinkles; though ſometimes it is ſmooth and co-extended with a thin brittle Shell, which contains a roundiſh Seed of a dark Colour on the outſide, and white within. They have a ſweet, acrid, aromatick Taſte; but in their Acrimony are much weaker than Pepper, though they are perceptible a long Time in the Mouth, and draw forth abundance of Spittle. Two Sorts of them come to us (*viz.*) the ripe, and the unripe. Theſe laſt are light, wrinkled, and contain a ſmall withered Kernel; the others are ſmooth, and perfectly full of Kernel, and are therefore the heavier. They are brought from *Java*, an Iſland in the *Eaſt Indies*; and the beſt are large, heavy and freſh.

Paul

Paul Herman calls the Plant upon which they grow *Curane*, *Cynos. Mat. Med.* It is a ſcandent Plant ſomething like the *Smilax Aſper*, and full of ſmall Branches; but no Author hitherto has given us a Deſcription of it.

Cubebs contain a ſubtile, aromatick, eſſential Oil, which is got from them in great Plenty by Diſtillation: Wherefore they are of great Service in an Apoplexy, Giddineſs, Palſy, Stinking Breath, and Want of Appetite. They ſtrengthen the Stomach when relaxed, diſcuſs Flatulencies, attenuate thick tough Phlegm adhering to the Coats of the Stomach and other Bowels, and are uſeful in cold Diſorders of the Brain and Womb. Being chewed along with Maſtich they diſcharge Spittle, fortify the Brain, and cure Catarrhs. *Garcias* ſays the *Indians* uſe them much infuſed in Wine to excite Venery, and the People of *Java* take them to warm the Stomach. They are likewiſe commended againſt Hoarſeneſs and Loſs of Voice. The Doſe in Subſtance is from gr. iij. to ℈j. and from ʒj. to ʒij. infuſed in Wine, or ſome other proper Liquor.

ARTIC. XII. *Of* PEPPER.

Piper, *Latinor.* Πέπερι, *Græcor. Fulful et Fulfel*, *Arab.* Pepper is a Kind of Spice which has been much eſteemed as a Seaſoning for Food in all Ages and in all Countres. It was known both to the ancient and modern *Greeks* and the *Arabians*, and was much uſed among them. *Dioſcorides*, *Galen*, and other Writers, diſtinguiſh three Kinds (*viz.*) black, white, and long Pepper; which they ſuppoſed to be all the ſame Fruit, differing only in Degrees of Ripeneſs. But the three Sorts which are at this Time in the Shops under theſe Names, are the Produce of three different Plants, which we ſhall here mention.

Piper Nigrum, *Off. Piper rotundum*, C. B. P. 411. Black Pepper is a ſmall round Grain, or dry Fruit, about as big as a leſſer Sort of Pea, with a black or dark brown wrinkled Bark, wherein is included an hardiſh and compact Subſtance; of which the exterior Orbit is of a yellowiſh green Colour, and the interior white, leaving when broken a ſmall Hollow in the Middle. The whole is of an acrid and extremely hot, or burning Taſte. It is brought from thoſe Parts of the *Eaſt Indies* which belong to the *Dutch*. The larger, heavier, and leſs wrinkled it is, the better.

The Plant whereof it is the Fruit is called *Lada*, *aliis*, *Molanga*, *ſive Piper Aromaticum*, *Piſon. Mantis. Arom.* 180. *Molago-coddi*, *Hort. Malab.* 1723. It grows in *Java*, *Sumatra*, and in all Parts of *Malabar*.

Piper Album et Leucopiper, *Off. Piper rotundum album*, C. B. P. White Pepper is of two Sorts. The one native, which ſeldom comes to us: The other, which is very common, is factitious, being nothing but decorticated black Pepper. The Decortication is performed by macerating the black Pepper in Sea-Water till the Bark ſwells and cracks, ſo as to be eaſily ſeparated from the inner Subſtance; and then it is laid in the Sun to dry. It differs from black Pepper in having a cineritious or whitiſh Colour, and milder Qualities.

The Plants to which the native white and the black Pepper belong, like the Vines producing white and black Grapes, are only diſtinguiſhable from each other when the Fruit is upon them; but the white is much ſcarcer, being to be met with no where but in ſome few Places in *Malabar* and *Malacca*. *Stephanus de Flacourt*, in his Deſcription of *Madagaſcar*, tells us that a *Species* of white Pepper grows in that Iſland; but as he does not deſcribe

ſcribe the Plant, we cannot determine whether it be the ſame, or no, with the white Pepper of which we are now ſpeaking.

Piper longum et Macropiper, *Offic.* *Piper longum Orientale*, C. B. P. 412. Long Pepper is a dry unripe Fruit, an Inch, or Inch and half long, of an oblong and cylindrical Figure, like the *Juli* of the Beech-Tree, having many *Striæ* running obliquely, as it were, in a ſpiral Order, with Tubercles or ſmall granular Excreſcencies ſo diſpoſed as to repreſent a Sort of Net-work. Within are ſeveral ſmall membranaceous Cells lying regularly one after another in a Row, each containing a roundiſh Seed ſcarce a Line in Diameter, of a blackiſh Colour on the outſide, whitiſh within, and of an acrid, hot, bitteriſh Taſte. This Fruit, which is a kind of *Julus* or *Catkin*, hangs by one End upon a ſlender Foot-Stalk about an Inch in Length. It ought to be large, ſound, freſh, and to make a ſlow, but laſting Impreſſion, upon the Tongue. When it is perforated, carious, or adulterated, it is unfit for Uſe.

The Plant is called *Pimpilim ſive Piper longum Piſon. Mantis. Arom.* 182. *Cattu-Tirpali*, *Hort. Malab.* 1727. It grows in *Java*, *Malabar*, and other Parts of the *Eaſt Indies*.

Black Pepper in the Quantity of four Pounds yielded in Diſtillation from a Retort, eight Ounces, three Drachms and an half of Liquor, which had the Smell and Taſte of Pepper, and was impregnated with ſome Portion of urinous Salt; then fourteen Ounces and eighteen Grains of reddiſh empyreumatick, acrid, and ſubacid Liquor, which gave Marks both of an urinous and acid Salt: After this two Ounces, five Drachms and twenty four Grains of urinous Spirit, with one Drachm of concreted volatile urinous Salt, half a Drachm of

limpid essential Oil, and eight Ounces of thicker Oil. The black Mass remaining in the Retort weighed eighteen Ounces, six Drachms and eighteen Grains. This being calcined for ten Hours, till it gave over smoking, left three Ounces, six Drachms and twenty four Grains of gray Ashes; from which were got one Ounce, three Drachms and twelve Grains of mere alkaline fixt Salt. The Loss of Parts in Distillation was one Pound, four Ounces and forty eight Grains: And in Calcination fourteen Ounces, six Drachms and eighteen Grains.

But six Pounds of black Pepper, macerated for six Days in Water and afterwards distilled, both from an Alembick with a Refrigeratory and from a Retort, gave up three Drachms of thin, transparent, yellowish, essential aromatick Oil, smelling like Pepper, and of an acrid Taste, but not very strong. The distilled Water also, upon which this Oil floated, had the Smell of Pepper, and an acrid Taste from the volatile urinous Salt which was dissolved in it, and made the Solution of corrosive Sublimate foul and milky. After the Grains had been thus macerated they were much deprived of their Taste. Whence it appears that Pepper abounds with a volatile oily Salt, to which its Virtues are chiefly owing.

The Use of Pepper is very common in all Nations in Sauces and Seasonings, which are intended to raise the Appetite and help Concoction. The common People among the *Indians* drink Water wherein a large Quantity of Pepper has been infused against a Languor or Weakness of the Stomach; and for the same Purpose, by fermenting fresh Pepper with Water, they prepare an extremely hot Spirit. Long Pepper they usually pickle with Vinegar for their Tables, and eat of it frequently in rainy Seasons, or to correct a phlegmatick Habit of

of Body. With us here the Uſe of black Pepper is more general; but the white, being leſs acrid, is more agreeable to nicer Palates. Long Pepper is chiefly confined to Medicines, becauſe it is more acrid, and not ſo grateful in Sauces as the others. It muſt be noted, that when we meet with Pepper in Preſcriptions without an Epithet, black Pepper is always to be underſtood, for the white and the long are never preſcribed without their proper Diſtinctions.

Theſe three *Species* of Pepper have the ſame Virtues (*viz.*) they heat, dry, attenuate, reſolve, open, fortify the too lax Fibres of the Bowels, and excite their Oſcillation, raiſe the Spirits, divide thick tough Humours, and accelerate the Motion of the Blood. Pepper is of ſingular Uſe in Coldneſs or Crudity of the Stomach, in colick Pains, and a cold *Intemperies* of the Brain. Some aſſert that in Powder it is heating; and, on the other Hand, is cooling, when taken whole: But this appears to be a Miſtake. It is true indeed the Powder, by adhering to the inner Coat of the Stomach, and by lying a long Time within its Foldings, in ſome Conſtitutions may produce Heat and Inflammation of the Part; which ſeldom or never happens if the Grains are ſwallowed entire; though their Efficacy is much the ſame. For it is evident that Pepper boiled or macerated with Victuals, whether it be whole or reduced to Powder, communicates an equal Acrimony to them: So that when taken whole, it is not cooling, but in the Bowels excites only a gentle Heat, and much leſs than the Powder.

Schroder obſerves, after *Galen*, that the Virtue of Pepper is very volatile; the Reaſon of which is evident from its *Analyſis*. Wherefore it ought never to be uſed in Extracts, nor in Medicines

which require long boiling, unleſs it be added towards the End.

Some Authors extol it greatly in intermitting Fevers, being taken to the Number of ſeven, eight, or nine Grains, either whole or groſsly broken, a few Hours before the Paroxyſm; and they even aſſert that a quartan Ague may be conquered by continuing the Uſe of it. We muſt confeſs that this Remedy, notwithſtanding it has often met with but bad Succeſs, has in many Caſes been ſerviceable, either by provoking the Patient to vomit, or bringing on a plentiful Sweat towards the End of the Paroxyſm. At leaſt, it makes the cold Fit ſhorter; and with this Intention *Celſus*, L. 3. C. 12. recommends it with warm Water and Garlick. But if it be taken too late, or when the Fit is juſt beginning, *Etmuller* obſerves that it increaſes the Heat of the Fever.

It is likewiſe commended for an alexiterial Quality againſt coagulating Poiſons, and for Catarrhs and Giddineſs. However, the too frequent Uſe of it is hurtful; foraſmuch as it diſpoſes the Stomach, Inteſtines and the other Bowels, to Inflammation, and raiſes an inordinate Heat in the Blood and all the Humours of the Body. Upon theſe Accounts Perſons of hot Temperaments, or who are ſubject to Inflammations, ought to avoid uſing it. The Doſe in Subſtance is from gr. j. to x. and to ʒj. in Infuſion.

Externally it is ordered in Apophlegmatiſms, Gargles, and ſneezing Powders, to incide viſcid Lymph obſtructing the Glands. It eaſes the Aching of a rotten Tooth, reduces a tumid *Uvula*, and removes Stitches of the Side, being applied immediately in the Beginning of the Diſeaſe. The *Indians* mix long Pepper with Ointments, which they uſe againſt Pains of the Limbs proceeding from

from Cold; and it is commended in a ſtubborn Head-Ache to be powdered and applied in a Bag to the coronal Suture, the Temples, or the lower Part of the Neck.

The Oil of Pepper is accounted excellent in Coldneſs of the Stomach, or a Laxneſs of its Fibres; and it is of great Service in a flatulent Colick. *Langius* often, with good Succeſs, gave three or four Drops of it with the Extract of Gentian, before the Paroxyſm in quartan Fevers. Being mixed with Oil of Bays, or of Nutmeg, and rubbed along the Spine, or upon the Stomach, it moderates the Coldneſs and Shivering of Agues. The ſame Liniment is very beneficial to Limbs affected with the Palſy.

Take nine Grains of black Pepper whole; and give them in white Wine two Hours before the Fit in intermitting Fevers, after proper Evacuations. Or,

Take of black Pepper groſsly broken ℈j. Tops of Wormwood P. j. Infuſe them warm in ℥iij. of Vinegar for a Night, and ſtrain for a Draught.

Take of long Pepper gr. vj. Powdered Alum gr. v. Mix, and make a Powder to be applied to the *Uvula*, when it is tumid and relaxed.

Take of long Pepper and white Amber ā q. ſ. Make a Powder to be applied in a Bag to the coronal Suture in a cold *Intemperies* of the Brain.

Take long Pepper in Powder q. v. Mix it with the White of an Egg and make a Cataplaſm to be put upon the Temples or the loweſt *Vertebra* of the Neck in a long Head-Ache, and to be often renewed.

Take

Take black Pepper and Cloves in Powder ā q. ſ. Make them into a Cataplaſm with the White of an Egg, and apply it to the Side to remove Stitches.

Take long Pepper and white Hellebore ā ʒj. Marjoram ℥ſs. Make a Sneezing Powder to be uſed in ſleepy Affections.

Take black and long Pepper ā ʒj. the Root of Arum, Pellitory, Cubebs, and Cardamoms, ā ʒij. Spirit of Sal Ammoniack ℥ij. rectified Spirit of Wine ℥vj. Let them macerate together for eight Days, and then decanting the Tincture add Oil of Amber and Lavender ā ʒij. Make a Liniment to be rubbed upon paralytick Limbs.

We have likewiſe another Kind of Pepper called *Piper Æthiopicum*, *Ethiopian* Pepper. *Piper Æthiopicum ſiliquoſum*, J. B. It grows in long, ſlender, round, blackiſh Pods, which hang together in Cluſters. It was well known to the *Arabians*, and the *Ethiopians* uſe it againſt the Tooth-ache; but it is ſeldom an Ingredient in Medicines *.

Some Years ago, a ſmall Fruit or Kind of Berry was brought from the Iſland of *Jamaica*, under the Name of *Jamaica* Pepper; though it is entirely different from the ſeveral *Species* of Pepper abovementioned. In the Shops it is called *Pimenta* or *Piper Jamaicenſe*. It is a round umbilicated Berry, gathered before it is ripe and dried in the Sun, generally larger than black Pepper, being ſome-

* It may be here proper to mention the *Capſicum* or *Guinea* Pepper. *Piper Indicum, ſive Calecutium, ſive Piper ſiliquaſtrum*, J. B. It is much the hotteſt and ſtrongeſt of all the Peppers, and might therefore be taken advantageouſly in ſome Caſes as a Medicine; but its Uſe at preſent is chiefly confined to the Kitchen.

times

times as large as a Juniper-Berry. The Bark is of a brown Colour, and includes two Seeds, together forming a Globe, each repreſenting an Hemiſphere; which are wrapped up in a dark green Membrane, and divided by a thin Film. It has a ſubacrid, aromatick or ſpicy Taſte, partaking of the Taſte of Cloves, Cinnamon, Pepper, *&c.* Whence in *England* it has obtained the Name of *All-Spice.*

The Tree is called *Myrtus Arborea Aromatica, foliis laurinis latioribus et ſubrotundis, Sloane Catal. Plant. Jamaic. Caryophyllus Aromaticus Americanus, Lauri acuminatis foliis, fructu orbiculari. Pluk. Phytagraph.* 155. It grows in great Plenty in the Woods and mountainous Parts of *Jamaica.*

This Berry is an excellent Spice, and good in many Purpoſes of Phyſick. It ſtrengthens the Stomach, helps Concoction, cheers the Spirits, and promotes the Motion of the Blood.

It yields in Diſtillation an eſſential Oil of a pleaſant Smell, which ſinks in Water.

ARTIC. XIII. *Of* CLOVES.

Upon theſe *Theophraſtus*, *Dioſcorides*, and *Galen*, are intirely ſilent: Yet *Serapio*, treating of Cloves, falſely cites the Authority of *Galen*. *Pliny* indeed, Lib. xii. Cap. 15. ſeems to mention them; for, ſays he, "There is ſtill at this Time in the *In-*"*dies* a Grain which is ſomething like Pepper; "but larger, and of a more brittle Texture, and "it is called *Garyophyllon.*" But the more judicious Criticks doubt whether this be the ſame with our Cloves; becauſe theſe are not Grains, nor have they a Reſemblance of Pepper. They therefore rather ſuſpect the *Garyophyllon* of *Pliny* to be the officinal Cubebs. *Paulus Ægineta* firſt ſpeaks of the Uſe of Cloves both in Food and Phyſick; and they were alſo known to the *Arabians.*

Caryophylli

Caryophylli Aromatici, *Off.* Καρυοφύλλον, *Pauli Æginet. Carunfel*, *Serapion.* They are a dry unripe Fruit, in Shape almoſt quadrangular and ſomething like a Nail, about half an Inch long, of a blackiſh brown Colour and wrinkled, having on the Top four Points ſtanding in a crucial Form, with a round Head or Cap in the Middle, which is compoſed of ſmall Leaves folding over one another like Scales. When theſe Leaves are laid open we meet with a great Number of reddiſh brown Fibres, and among them ariſes out of a Cavity a four cornered Style of the ſame Colour. This Cap however is not always to be found, being very liable to be broken off in Carriage. They have an acrid, bitteriſh, and agreeable Taſte, and a very fragrant Smell. The beſt are almoſt black, heavy, fat, hot in the Mouth, of a pleaſant Smell, and give out a certain Moiſture when they are preſſed.

The Tree is called *Caryophyllus Aromaticus fructu oblongo*, C. B. P. 410. *Iſhinka*, *Piſon. Mantiſs. Arom.* 177. It grows in the *Molucca* Iſlands, and particularly in *Ternate*, where it is induſtriouſly cultivated by the *Dutch*. When the Cloves are ſuffered to hang upon the Tree till they are fully ripe they are called *Antophylli*. Theſe the *Dutch* preſerve in Sugar, and eat them in long Voyages at Sea to help Digeſtion, and prevent the Scurvy.

Freſh Cloves yield a thick Oil by Expreſſion, which is fragrant and of a reddiſh brown Colour. In Diſtillation they give up a large Quantity of eſſential Oil, which at firſt is tranſparent and yellowiſh, but afterwards inclines to red, and ſinks in Water; and at laſt a Portion of thick empyreumatick Oil, with ſome acid Liquor. From the *Caput Mortuum*, after Calcination, is obtained a ſmall Quantity of fixt neutral Salt.

The

The Uſe of this Fruit in the Kitchen is well known to every one. By Phyſicians it is reckoned heating and drying; to be good againſt cold Affections of the Brain, Giddineſs, Weakneſs of Sight, Head-Ache, Fainting, Palpitation of the Heart, Debility of the Stomach, Impotency in Men, Suppreſſion of the *Menſes*, and hyſterical Diſorders. They reſiſt the Contagion of the Air, being either eaten, or uſed in Fumigation. The Doſe in Subſtance is from gr. iij. to ℈j. and in Infuſion from ʒſs. to ʒij. Externally they are made Uſe of in Bags, or Plaiſters to apply to the Stomach againſt Vomiting, or Pains ariſing from Coldneſs. The Powder is ſometimes ſcattered upon the Head to remove Pain or Heavineſs; and in catarrhous Affections of the Brain, or Palſy of the Tongue, Cloves are uſeful to chew in the Mouth in order to draw forth the Spittle. The eſſential Oil has the ſame Virtues, and is alſo of great Service to carious Bones, and the Tooth-Ache. In Apoplexies it is rubbed upon the lower and back Part of the Head; and is taken inwardly to gutt. j. or ij.

Take Cloves and Cinnamon ā ℈j. Nutmeg gr. xv. Sugar ʒiſs. Make a Powder to be taken in red Wine for Crudity or Flatulency of the Stomach, or for Vomitings.

Take of dry Angelica-Root ʒij. Cloves, Nutmeg and Mace, ā ʒj. *Florentine* Orris and Lavender Flowers, ā ʒiſs. ſolid Storax, male Frankincenſe and Amber, ā ʒj. Make a groſs Powder, which is to be mixed with Cotton and ſewed up into a Cap f. a. between a double Piece of Silk. A Cap made after this Manner may be warmed every Night with the Smoke of Amber and Maſtich thrown

thrown upon Gledes, and is proper to wear upon the Head in moiſt and pituitous Affections, or in long Pains ariſing from Catarrhs and Cold.

Take of the Oil of Cloves gutt. ij. Oil of Cinnamon gutt. viij. Tincture of Ambergreaſe gutt. j. Sugar-Candy ℥ſs. Make a Powder to be kept in a Veſſel cloſe ſtopt. The Doſe is ʒj. in red Wine or Sack to ſtrengthen the Stomach and help Digeſtion.

ARTIC. XIV. *Of the* NUTMEG, *and* MACE.

Nux Moſchata, Nux Myriſtica et Aromatica, Off. Giauziban, Avicen. Jeuzbave vel Juſbaque, Serapion. Μοσχοκάρυον, Κάρυον μυρεψικὸν, Μυριστικὸν ἀρωματικὸν, *Græcor. recent.* The Nutmeg is the Kernel of a Fruit, of a firm and compact Subſtance, yet eaſily breaking into Pieces in a Mortar. It is fattiſh, odorous, and ſomewhat wrinkled on the outſide, where the Colour is almoſt cineritious; but within is marbled or variegated with reddiſh brown and whitiſh yellow Veins, running here and there without Order. The beſt are heavy and fat, and being pierced with a Needle emit an Oilineſs. In the Shops we meet with two Sorts. The one has the Shape of an Olive, a pleaſant aromatick Smell, and an acrid, aromatick Taſte, with ſome aſtringency. This is called *Nux Moſchata fœmina, the female Nutmeg*, and is very much uſed. The other is longer and almoſt cylindrical, has an aromatick Smell and Taſte like the foregoing, but is inferior to it, and not ſo often made uſe of. This is called by ſome *Nux Moſchata Mas, the male Nutmeg*. With theſe we ſometimes find Nuts of irregular Figures, which are to be ranked under the *Luſus Naturæ*, or thoſe Productions that deviate

deviate from the common Order of Nature. There are likewiſe other wild Nutmegs, many Species of which are diſtinguiſhed by the *Dutch*; but they are never uſed in Phyſick.

J. Bauhine ſuppoſes Nutmeg to be the Κώμακον of *Theophraſtus*, and that it was no Stranger to *Pliny*, being, as he affirms, the *Cinnamomum* of that Author; and that the expreſſed Juice, which was then called *Caryophon*, was the ſame with what occurs at this Time in the Shops by the Name of Oil of Nutmeg. This, however, is much to be doubted, ſince *Dioſcorides* has ſaid nothing either of Nutmeg or Mace: For the *Macer* which he ſpeaks of was quite different from the Mace of our Shops, it being the Bark of a certain Wood, though at preſent it is very uncertain of what Sort. The *Arabians* were very well acquainted both with Nutmeg and Mace, and the firſt who mentions them is *Avicenna*.

The Tree bearing the female Nutmeg is diſtinguiſhed, *Nux Moſchata fructu rotundo*, C. B. P. 407. *Pala*, *Piſon. Mantiſs. Arom.* 173. It grows in the *Molucca* Iſlands ſpontaneouſly, and is cultivated in *Banda*.

Macis, *Off. Bongo-Pala Moluccenſibus*, *Piſon. Mantiſs. Arom.* 173. *Biſbeſe*, *Serapion. Befbahe. Avicen.* Mace is the Produce of the ſame Tree, it being a Sort of membranaceous Subſtance that lies underneath the ſoft juicy Covering of the Fruit, which is like a Walnut, or ſmall Peach, and is extended upon the hard woody Shell that incloſes the Nutmeg. The beſt is tough and full of Oil with a Colour bordering upon that of Saffron, and an extremely fragrant Smell.

Nutmeg contains a large Quantity both of thin and thick eſſential Oil, united with ſome acid Salt and aſtringent Earth. A twofold Oil is got from

it by the Means of Diſtillation; for the Nuts bruiſed and macerated in a large Proportion of Water, yield about an Ounce of thinner Oil for every Pound of Nutmeg; and when the Diſtillation is ended a thick Oil ſwims upon the Water, which is like Suet, and almoſt void of aromatick Virtue. From three Ounces and two Drachms of Nutmeg, by Expreſſion, are obtained ſixteen Ounces of Oil of the Conſiſtence of Suet, with the Smell and Taſte of Nutmeg.

In Mace, the Oil is thinner and more copious; whereof the firſt Portion coming over in Diſtillation, is pellucid like Water, and of an excellent Smell and Taſte; the ſecond has a Caſt of yellow, and the third, if the Fire be ſtrong, is reddiſh.

The whole is ſo ſubtile and volatile, that a great Part of it is loſt, unleſs the Bottles in which it is put be well ſtopt. An Oil is likewiſe drawn from Mace by Expreſſion, which is thinner than the expreſſed Oil of Nutmeg, being nearly of the Conſiſtence of Lard.

Nutmeg is uſeful not only for ſeaſoning Food, but alſo in Phyſick. It is ſtomachick, helps Concoction, relieves Vomiting, fortifies the Bowels, diſcuſſes Wind, appeaſes colick Pains, ſtops Looſneſſes, increaſes the Motion of the Blood, reſiſts Poiſon, and is of great Service in Catarrhs, and cold Affections of the Nerves. *Etmuller* recommends it againſt a Palſy of the Parts which are ſubſervient to Deglutition to be chewed in the Mouth, and ſwallowed gradually. It likewiſe induces Sleep, and on this Account an immoderate Uſe of it ought to be avoided; for *Bontius*, in his Notes upon *Garcias*, tells us of ſeveral Perſons who by uſing it too freely have lain one or two Days without either Speech or Motion, much in

the

the ſame Manner as if they had been ſeized with a *Carus*. The *Dutch* alſo obſerve that the Nuts when they are candied, being eaten every Day, or in too large Quantities, occaſion Drowſineſs and Loſs of Memory. Moreover, they oppreſs the Stomach, diſorder Digeſtion, and ſpoil the Appetite, as well by their oily Particles, which render the gaſtrick Juice inert, as by their active Particles, which diſpoſe the Coats of the Stomach to Inflammation. In flatulent Diſorders of the Womb, in Pain or Inflation of it after Delivery proceeding from Cold, a Fumigation of Nutmeg is recommended as an approved Remedy. It is ſometimes toaſted to make it more aſtringent, and is thus ordered in Looſeneſſes and Dyſenteries. The Doſe is from ℈ſs. to ʒſs. in Subſtance, and to ʒj. toaſted.

Mace has the ſame Virtues as Nutmeg, only it is leſs aſtringent. In too large a Quantity likewiſe it is attended with equal Danger. *Caſp. Hoffman* ſpeaks of a Girl, who, to provoke her menſtrual Diſcharges, taking over largely of it, was delirious for ſome Hours after.

Take of Nutmeg ℥ſs. Cinnamon ʒij. Cloves ʒſs. Sugar ℥j. Mix and make a Powder, of which take ʒij. in a Draught of Wine after Meals to help Digeſtion.

Take of Nutmeg toaſted ʒſs. *Japan* Earth ℈j. Quince-Marmalade q. ſ. to make a Bolus, to be repeated two or three Times a Day in a *Diarrhœa*.

Take of Nutmeg ʒj. *Venice* Treacle ʒſs. *Diacodium* q. ſ. Make a Bolus, to be given in colick Pains, a Dyſentery, *Teneſmus*, &c.

Take of Mace ʒſs. Aniſe and Coriander Seed ā ℈j. white Sugar ʒiſs. Bruiſe them groſsly and infuſe for ſome Hours in a Glaſs of

Wine; then ſtrain and let the Liquor be drank to remove a flatulent Colick.

The Oils by Diſtillation and Expreſſion, both of Nutmeg and Mace, having the ſame Virtues, are made uſe of indifferently. They do good in Gripings of the Belly and nephritick Pains, given inwardly from gutt. j. to iv. Externally they are commended againſt nervous Affections, the Palſy, Gout, and Catarrhs. They ſtrengthen the Stomach, ſtop Vomiting and the Hickup, and help the Concoction of Food, being rubbed upon the Region of the Stomach: Upon the Navel they eaſe the Gripes in Children, and upon the Temples have a gentle Quality of procuring Sleep. Mr. *Ray* recommends the Oil of Nutmeg to anoint the Breaſts of young Maids that are too ſmall, aſſuring us, that it makes them grow larger in a ſhort Time. The Oils of both are often uſed in cathartick Pills as Correctors, and are frequently mixed with apoplectick, cephalick, and hyſterick Balſams.

Take of the Oil of Nutmeg by Expreſſion ʒij. Balſam of *Peru* ʒſs. the diſtilled Oils of Mace, Wormwood, Mint, Cinnamon, and Cloves, ā gutt. xij. Make a Balſam to be rubbed upon the Region of the Heart and Stomach, in Swooning, Anxiety at the Heart, Hickup, *Naufea*, Vomiting, bad Digeſtion, and Weakneſs of the Stomach.

CHAP.

CHAP. VII.

Of LIQUID *and* CONCRETED JUICES *of* PLANTS.

BY the Word *Juice*, we here underſtand, not all the Juices of Plants in general and without Diſtinction, but ſuch only as are uſed in Phyſick, diſtilling from their reſpective Plants either of their own accord, or more frequently by Inciſions; and which are ſometimes termed *Lachrymæ*, from their appearing in the Form of Tears or Drops as they fall down. Theſe Juices, for the moſt Part, concrete, either into a Reſin, or a Gum, or into a Subſtance of a middle Nature between both, which is called a Gum-Reſin. In the Shops they are often confounded, the Name of Gum being there given to ſome Reſins, and likewiſe to many Gum-Reſins; but in order to diſtinguiſh them with greater Accuracy, we ſhall proceed to explain what is properly a Reſin, a Gum, and a Gum-Reſin.

A Reſin is a fat, oily, inflammable Juice, ſoluble in Oil, but not in Water. It conſiſts of ſulphureous Parts united with an acid Salt. In Reſpect to its Conſiſtence it is two-fold; the one liquid, which is viſcid and tenacious; the other dry or ſolid, which is commonly friable, yet becomes ſoft by Heat. Among the liquid Reſins are reckoned the Balm of *Gilead*, the Balſam of *Peru*, of *Tolu*, Capivi, Liquid Amber, Liquid Storax, the different Sorts of Turpentine, and Labdanum. In the Claſs of ſolid Reſins are Storax, Benzoine, Tacamahac, Olibanum, Maſtich, Sandarach, Dragon's Blood, Copal, Anime, Caranna, Elemi, Hedera, and Camphore.

A Gum is a concreted Juice which eaſily diſſolves in Water. In the Fire it neither melts nor flames, but only makes a crackling Noiſe. It is compounded of a ſmall Portion of Sulphur combined with Earth, Water, and Salt, ſo as to conſtitute a Mucilage. Of this Sort are Gum Tragacanth, Arabick, the Gum of Plumb Trees, *&c.* and Manna.

A Gum-Reſin is a concreted Juice equally ſoluble in Water and in Oils, either wholly or in the greateſt Part. It is compounded of reſinous and gummous Parts united together. If with theſe there be a ſufficient Quantity of ſaline Parts, the whole is intirely ſoluble in Water; but if the Proportion of this Salt be not large, there remains in the Water ſomething of a reſinous Subſtance, which is only capable of being diſſolved in Oil or Spirit of Wine. In this Rank are Bdellium, Myrrh, Aſſafœtida, Ammoniack, Euphorbium, Galbanum, Opopanax, Sagapenum, and Sarcocol.

We ſhall now give an Account of ſuch of theſe as are commonly preſcribed in Phyſick.

Of LIQUID RESINS.

ARTIC. I. *Of the* BALSAM *of* MECCA *or* BALM *of* GILEAD.

Opobalſamum, *Balſamelæon*, *Balſamum Judaicum*, *Gileadenſe*, *Syriacum*, *E Meccâ*, *Conſtantinopolitanum*, *Album*, *Off.* Ὀποβάλσαμου, *Græcor.* This is a precious liquid Reſin, of a whitiſh Colour, or ſomething yellowiſh, having a fragrant Smell approaching to the Smell of Citron, and an acrid aromatick Taſte. It ought to be choſen freſh, fluid, oily, and fragrant in its Smell; being not ſo valuable

able when it is thick, old, and adulterated with Turpentine, or other Mixtures, which the Smell and Taſte eaſily diſcover.

The Plant, or Shrub, which yields this Balſam, is called *Balſamum Syriacum*, *Rutæ folio*, C. B. P. 400. *Balſamum verum*, J. B. 1. 298. *Balſamum Lentiſci folio*, *Ægyptiacum*, *Bellon. Obſerv. Balſamum*, *P. Alpin.* 48.

Authors are not agreed concerning its native Soil. *Theophraſtus*, *Dioſcorides*, *Pliny*, and others, have ſuppoſed that it grew in *Judæa:* And they tell us that it was cultivated in the Valley of *Jericho* in two Gardens, the one conſiſting of about twenty Acres of Land, the other not ſo much. Hence it was called *Balſamum Judaicum*. *Pliny* aſſerts that it grew no where elſe but in *Judæa*; and relates that the *Jews*, in the laſt War between them and the *Romans*, deſtroyed all the Trees they could, and that the *Romans*, on the other Hand, fought to defend and get Poſſeſſion of them. *Theophraſtus* aſſerts that it grows no where ſpontaneouſly; but *Dioſcorides* ſays it grows not only in *Judæa*, but likewiſe in *Egypt*. According to *Strabo* it grows in *Arabia*, in the maritime Parts of the Country of the *Sabæans*. In fine, it appears that neither *Judæa* nor *Egypt* have been its native Soil; for at this Time no Balſam-Trees are found in *Judæa*, nor were any to be found in the Time of *Bellonius*, having, as he ſuppoſes, been either entirely neglected, or plucked up, during the Invaſion of the *Turks*. He ſaw them no where but in the *Sultan*'s Gardens in one of the Suburbs of *Memphis*, now called *Cairo*, where they were cultivated with great Care; and, according to his Account, had been tranſplanted thither, at a vaſt Expence, from *Arabia fœlix*. Moreover, the ſame Author affirms that formerly, and likewiſe in his

Time, they were to be met with in *Arabia fœlix*, whence the Wood and Fruit had been brought in all Ages to *Memphis*, with other *Arabian* Commodities. When *Auguſtin Lippi* arrived at *Cairo* in the Year 1704, there were no Balſam-Trees remaining in the *Sultan*'s Gardens, they having all periſhed long before. He relates, in his Epiſtles to M. *Fagon*, Phyſician to *Lewis* XIV. that they are only to be found growing wild in *Mecca* and other Provinces of *Arabia fœlix*, as he was informed by a certain Prince, Son of the King of *Mecca*; from whom alſo he learnt the Method of extracting the Balſam. We may therefore conclude that the Balſam-Tree was always a Native of *Arabia fœlix*, and that it never grew ſpontaneouſly either in *Egypt* or *Judæa*.

The Balſam of *Mecca*, according to *Alpinus*, when it is firſt drawn from the Tree, is of a white Colour, and an excellent, penetrating Smell, ſomething like Turpentine, but much more fragrant, and of a bitter, acrid, aſtringent Taſte. At firſt it is thick and turbid, like the Oil of Olives when firſt expreſſed from the Fruit; afterwards it becomes extremely thin, limpid and light: Its Colour turns greeniſh, then approaches to the Colour of Gold, and at length reſembles Honey. It alſo grows thick and tenacious with Age, like Turpentine, and is greatly deprived of its Smell. Being dropt into Water, when freſh, it does not ſink in the Water by Reaſon of its Lightneſs, but being let fall from a conſiderable Height, it ſubſides a while beneath its Surface, whence it almoſt continually riſes up and expands itſelf over the Water, and mixes with it ſo, that it is very difficultly ſeparated. In a ſhort Time after, it concretes in the Water, and coagulates, when, by an Iron-Pin or ſuch like Inſtrument, the whole may be taken

taken out entire, which then appears of a white Colour, like Milk. And theſe are the Marks of the genuine freſh Balſam.

The Ancients gathered only the Balſam which iſſued from ſlight Inciſions in the Bark of the Tree, and in very ſmall Quantities. At preſent, according to *Auguſtin Lippi*, there are three Sorts. The firſt may be called the true Balſam of *Mecca*, being the Juice which flows either of its own Accord or from Wounds made in the Bark of the Tree; but the Quantity obtained is ſo ſmall that it ſcarce ſuffices for the Grandees, and other Inhabitants of the Country, and therefore is very ſeldom carried abroad. The two other Sorts are procured thus. The ſmall Branches, with the Leaves of the Tree, are put into a Pot and covered with Water, and when the Water boils, a thin limpid Oil ſwims upon the Top, which is carefully ſcummed off. This ſeldom comes to us, except by Way of Preſent to ſome Perſon of Diſtinction. It is reſerved chiefly for the Uſe of the Ladies, who eſteem it much as a Coſmetick, and Unguent for their Hair. The boiling being continued, another Oil riſes to the Surface, ſomewhat thicker than the former, and neither ſo fragrant nor ſo valuable. This is ſent away by *Caravans* to *Cairo*, and from thence into other Nations, and is the common Sort in *Europe*.

It yields in Diſtillation, when freſh, a very fragrant and thin Oil, and a reddiſh Kind of Reſin remains behind. This, by a ſtronger Degree of Heat, gives up a Portion of thicker Oil, pretty much like Oil of Turpentine, and at the laſt a reddiſh Oil with ſome Drops of acid Liquor. Its Efficacy is chiefly owing to the thin and volatile Oil. The Virtues of this Balſam are undoubtedly very excellent, but are much impaired by long keeping. It has the Reputation of removing Putrefaction

trefaction and Corruption of the Bowels, of being ſerviceable in Abſceſſes of the Lungs, Liver, and Kidneys, and likewiſe againſt the Bites and Stings of Serpents and other venomous Animals. In Times of Peſtilence, the *Egyptians* reckon it inferior to nothing as a Preſervative, being taken every Day in the Quantity of half a Drachm; and they frequently cure putrid Fevers by giving it till the Patient ſweats plentifully. In chronical Fevers, in Crudity and Coldneſs of the Humours, and Obſtructions of the Bowels, they find nothing more efficacious than two Scruples or a Drachm of this Balſam taken every Day. In ſhort, according to *Alpinus*, they make uſe of no Medicine more than this, giving it in almoſt all Diſeaſes; in thoſe eſpecially which are owing to a cold and moiſt *Intemperies*, or to Poiſons. The Women alſo take it often with Succeſs to cure Barrenneſs; and uſe it for the ſame Purpoſe by way of Suppoſitory and Fumigation. In a *Gonorrhœa*, *Fluor Albus*, and Dyſentery, it is given to good Advantage from twelve Drops to twenty every Day in the Morning faſting. Moreover, it is commended for diſſolving crude Tubercles and Infarctions of the Lungs; and oftentimes does good in phthiſical Diſpoſitions, as well by reſtoring the Tone of the pulmonary Fibres, as by tempering the Acrimony of the Serum which falls upon the Lungs, and inciding the viſcid Humours: And on this Account it is alſo beneficial to Aſthmaticks. In Ulcers of the Lungs, Kidneys, and Bladder, and other internal Parts, it is advantageouſly preſcribed, provided that the Ulcers are not eryſipetalous, or attended, as they often are, with Inflammation; for then, as *Fred. Hoffman* obſerves, all Things of this Nature are extremely prejudicial, by increaſing the Inflammation, and ſuppreſſing the Diſcharge of the

the purulent Matter. Therefore, whenever these Cases are joined with an inflammatory Fever, Balsams ought to be avoided, or at least ought to be given with very great Caution.

It has been so famous in all Ages for curing Wounds externally, that other Vulneraries have usually been called Balsams from it; and by this Title Empiricks and Quacks endeavour to recommend their Medicines to the Vulgar. *Dioscorides* says it deterges and purifies sordid Ulcers, and *Prosper Alpinus* after him observes the same. Particular Instances might be brought of dangerous Wounds which have been healed in a little Time by this Balsam: But we must take Notice that it is principally useful in simple Wounds, or a mere Solution of Continuity, to procure a more speedy Coalition of the divided Parts; for when Wounds are attended with Contusion or Laceration of the fleshy Fibres, or others, a Suppuration always succeeds, and consequently a Re-union of the Parts is not to be expected from balsamick Applications; which in these Circumstances are prejudicial, and prolong the Cure.

The Dose is from gutt. vj. to ʒs. in Sugar, or made into an Emulsion by dissolving it with the Yolk of an Egg in Broth, Wine, or any other convenient Liquor.

Take of the Balsam of *Mecca* gutt. xij. Sugar finely powdered q. s. Make a Bolus to be given in a *Gonorrhœa*, *Fluor Albus*, or *Dysentery*.

Take of the Balsam of *Mecca* ʒs. the Yolks of Eggs N°. ij. Sugar boiled in Rose-Water to the Consistence of a Syrup ʒij. Mix and give a Spoonful in ʒvj. of the pectoral Decoction, or in a Draught of warm Milk, for a troublesome

ſome Cough, or in the Beginning of a Conſumption, to reſolve crude Tubercles of the Lungs.

Beſides the Balſam, we likewiſe uſe the Fruit of the ſame Tree, which in the Shops is called *Carpobalſamum*. It is an oblong, roundiſh Berry, leſs than a Pea, ending in a ſmall Point, and adhering to a ſhort Pedicle. It has a brown, wrinkled Bark, marked with four Ribs, including, when the Fruit is perfectly ripe, a little balſamick, oily, whitiſh Pith, which has an agreeable Smell and Taſte of the true Balſam. It ought to be yellowiſh, full, large, heavy, of an hot Taſte in the Mouth, and gentle Smell of the Balſam. When it is old, carious, crumbling into Powder, empty, light and void of Smell, it is not fit for Uſe. It is an Ingredient in *Venice* Treacle and Mithridate.

The *Xylobalſamum* or Wood of the Balſam-Tree is now very ſeldom found in the Shops.

ARTIC. II. *Of the* BALSAM *of* PERU.

Several reſinous Juices which are brought over to us from *America*, are dignified with the Name of Balſams, as having many excellent Virtues in common with the Balſam of *Mecca*. Among theſe the Balſam of *Peru*, the Balſam of *Tolu*, and the Balſam of *Capivi*, are the moſt noted. The Balſam of *Peru* is two-fold (*viz.*) the white and the brown.

1. *Balſamum Peruvianum album*, *Off.* The white Balſam of *Peru* is a fluid reſinous Juice, of a tenacious Conſiſtence, but ſomewhat thinner than Turpentine. It is inflammable, tranſparent, of a yellowiſh white Colour, a ſomewhat acrid bitteriſh Taſte, and fragrant ſweet Smell, ſomething like Storax. It is brought from *Peru*, and other Parts of *America* belonging to *Spain*.

2. *Balſamum*

2. *Balſamum Peruvianum fuſcum, vel, Nigricans, Off.* The brown Balſam of *Peru* is likewiſe a fluid, reſinous, inflammable Juice, of the Conſiſtence of Turpentine, having a dark reddiſh Colour, a fragrant Smell like Benzoine, and a gentle pungent, ſubacrid Taſte. When it appears black, and has an unpleaſant Scent, as if it were burnt or ſmoaked, it is not fit for Uſe.

They are both obtained from the ſame Tree, which is called *Hoitziloxitl, ſeu Arbor Balſami Indici, Balſamifera prima, Hernand.* 51. *Balſamum ex Peru,* J. B. 1. 295. *Cabureiba, ſeu Balſamum Peruvianum, Piſon.* 119. *Cabui Iba, Marcgrav.* 137. It grows in *Peru,* and other ſouthern Parts of *America.* The white Balſam runs from an Inciſion in the Bark of the Tree; and the brown is got by a Method of Decoction much uſed by the *Indians.* They caſt ſmall Pieces of the Trunk, Bark, and Branches, into a large Cauldron full of Water, which they ſuffer to boil as long as convenient. When the Water has ſtood to cool, the Oil, which ſwims upon it, is gathered in Shells and put by.

The white Balſam, according to *Paul Herman,* being chymically treated, gives up an Oil which immediately concretes into a Salt reſembling Sugar, and white like Camphore, conſiſting of fine oily Particles, and a volatile acid Salt intimately combined.

The Balſam of *Peru* (either the white or brown) is commended for the ſame Uſes as the Balſam of *Mecca,* and is given in the ſame Manner, from four Drops to twelve in Aſthmas, Conſumptions, nephritick Pains, and Suppreſſion of the *Menſes.* Externally it eaſes Pains ariſing from cold Humours, reſtores contracted Nerves, and is excellent for curing Wounds. It is adviſeable to be cautious in uſing it, becauſe of its ſtrong Smell, which diſorders

orders and oppreſſes the Head, and ſometimes cauſes Swooning. *Etmuller* obſerves that it is much more acrid and diſagreeable when diſſolved with the Yolk of an Egg, than when taken by itſelf.

Take of the Conſerve of red Roſes ʒj. *Lucatellus*'s Balſam ʒſs. Balſam of *Peru* gutt. iij. Make a Bolus for an old Cough, a recent pulmonary Conſumption, internal Ulcers, Falls, Bruiſes, and Dyſenteries.

ARTIC. III. *Of the* BALSAM *of* TOLU.

Balſamum Tolutanum, *Off.* *Balſamum ſolidum*, *quorumd.* This is a tough reſinous Juice of a middle Conſiſtence between a Liquid and a Solid, but growing dry and brittle by Age. It has a yellowiſh brown or ſomewhat golden Colour, and a very fragrant Smell approaching to the Smell of Benzoine and Citron, with a pleaſant ſweet Taſte, not in the leaſt nauſeous like the other Balſams. It is brought in ſmall Gourds from a ſouthern Province of *America* lying between *Carthagena* and *Nombre de Dios*, which the *Indians* call *Tolu*, and the *Spaniards Honduras*.

The Tree which produces it is called *Balſamum Tolutanum*, *foliis Ceratiæ ſimilibus*, *quod candidum eſt*, C. B. P. 401. *Balſamum de Tolu*, J. B. 1. 196. *Balſamum Provinciæ Tolu*, *Balſamifera*, *quarta*, *Hernand.* 53. An Inciſion is made in the Bark during the hot Seaſons, and the Juice iſſuing from it is received by Spoons formed of a black Kind of Wax. Afterwards it is put into Gourds, or other Veſſels prepared for it.

This Balſam has the ſame Virtues aſcribed to it as the Balſam of *Peru*, and by ſome is accounted preferable. In *England* the Uſe of it is more general, eſpeci-

eſpecially in Conſumptions and Ulcers of the internal Parts. It is particularly celebrated for healing Wounds, and defending them from Putrefaction, in Wounds of the Joints, or Cuts, and Punctures of the Nerves. It has no Acrimony like the *Peruvian* Balſam, and therefore more agreeable to take diſſolved in Liquors. A Syrup is ordered from it in the *London Diſpenſatory* which is much uſed in the *Engliſh* Shops.

ARTIC. IV. *Of the* BALSAM *of* CAPIVI.

Balſamum Braſilienſe, *Balſamum Oleumve Copaiba*, *Copaiva*, *vel Copaii*, *Off. Capivus*, *Dale Pharmacol.* This is a liquid reſinous Juice of the Conſiſtence of Oil, when freſh, but after ſome Time growing thick and glutinous. It is generally of a yelloviſh white Colour, an acrid, bitter, aromatick Taſte, and fragrant Smell, reſembling the Smell of the Wood called *Calambourg*. It is brought from *Braſile* into *Europe* by the *Portugueze*. In the Shops are two Sorts: The one is more limpid, of a pale or yellowiſh Colour, an agreeable Smell and biteriſh Taſte, being thinner or thicker, approaching to the Conſiſtence of Turpentine, according to the Difference of its Age; and this Sort is the beſt: The other is not ſo clear, of a whitiſh Colour, and a thicker Conſiſtence, like Honey; having withal an unpleaſant terebinthinous Smell, and nauſeous bitter Taſte, with a certain Proportion of Water at the Bottom. This Sort ſeems either to be adulterated, or to be drawn from the Bark and Branches of the Tree by Decoction, and therefore is not eſteemed.

The true Balſam is got by Inciſion from a Tree which is called *Copaiba. Piſon. et Marcgrav. Arbor balſamifera Braſilienſis*, *fructu monoſpermo*, *Raii*

Hiſt. 1659. It grows in the inland Parts of *Braſile*, as alſo in *Maranhon*, and the neighbouring *Antilles*.

This Balſam in Diſtillation with a large Quantity of Water, yielded a clear Oil of a pleaſant ſubtile Smell; and the diſtilled Water had the ſame Smell. The Portion remaining upon the Water in the Cucurbit had the Conſiſtence and Smell of a Reſin. This being diſtilled from a Retort gave up a certain Portion of etherial Oil, a pretty large Quantity of ſubacid Liquor, and at laſt ſome thick empyreumatick Oil, which at firſt was red, and afterwards brown. A ſhining, rare, light, black Maſs or Coal, was left behind, which afforded no Salt by Lixiviation. Hence it appears that the Balſam of *Capivi* is compounded of both ſubtile and thick Oil united with ſome acid Salt; and its Virtues are owing to theſe Principles.

Thomas Fuller, a Phyſician of the Univerſity of *Cambridge*, obſerves that this Balſam communicates no violet Smell to the Urine like Turpentine, but imbues it with a manifeſt bitter Taſte. The ſame Author extols it for many extraordinary Properties *. It ſoftens the muriatick Saltneſs of the Serum, the Spittle, and the Urine, by involving the ſaline *Spicula*. It reſtores the Blood when impoveriſhed by a Loſs of its balſamick Parts: Cures its ſcorbutick, rancid and putredinous Cachexy: Is prevalent, either externally, or internally, againſt Ulcers; for it both cleanſes and heals them. It cures all Sorts of Wounds, and particularly thoſe of the Nerves: Stops Dyſenteries and other Fluxes of the Belly; as alſo the *Fluor Albus* and *Gonorrhœa*. "It wonderfully deterges (ſays Dr. *Fuller*) "the Reins, Ureters, and Bladder, when obſtruct-"ed with Sand, *Mucus*, or Pus; ſtrengthens them

* See his Diſpenſatory, p. 326. 327. of the *Engliſh* Edition.

" when relaxed, and heals them when ulcerated. " It provokes Urine, extinguiſhes its Heat, and " cleanſes off its bloody, foul, and purulent Con- " tents more effectually than any Thing I ever " yet met with *."

He commends it likewiſe as the beſt of all Thoracicks. " It deterges (ſays he) the *Bronchia* " and Veſicles, recovers the Tone of the Lungs, " heals their Breaches, and (as I have thought) " even diſſolves the *Tubercula cruda*; for I have " ſeen where this Balſam alone hath (beyond all " Expectation) cured dry deep Coughs, that ap- " peared horribly dangerous, and manifeſtly threat- " ened a Conſumption †.

" And notwithſtanding it is intenſely bitter, and " manifeſtly hot, yet (which is an admirable Ad- " vantage of it) I have found it mighty agreeable " to hectick Perſons, and rather abates than aug- " ments their Heats, as one might fear it would. " The Reaſon of which is, I ſuppoſe, becauſe it " ſo powerfully ſubdues Saltneſs and Acrimony, " and obliterates putrēdinous Inquinations."

It is given either in a ſoft Egg, or mixed with Wine, or any other convenient Vehicle ‖, or in the Form of a Bolus with Sugar, Liquorice-Root, or other proper Powders, from gutt. v. to xv. or xx. If it be given to ʒij. or ʒiij. for a Doſe, it purges like Turpentine.

* To this he adds. " A Patient of mine, now living, who " voided mere Chyle inſtead of Urine, and not one Drop of " Water with it, and had great Pains and Weakneſs, was re- " ſtored to perfect Health and Soundneſs by this Medicine."

† " And I have more than once (ſays he) cured with it " Coughing up of Blood and *Pus* in frightful Quantities. At " this very Time of Writing, I have a poor Workman that " is an eminent Inſtance of it."

‖ The beſt Way of taking it, in a liquid Form, is to drop it into a Glaſs of Water.

Take of the Balſam of *Capivi* ʒſs. Yolks of Eggs N°. ij. Syrup of Ground Ivy ʒij. Strong white Wine ʒviij. Make a Mixture, of which let a Spoonful or two be taken Night and Morning, for an Ulcer of the Lungs, or Tubercles.

Or,

Take of the Balſam of *Capivi* gutt. xv. Liquorice-Root powdered and Amber prepared ā gr. xv. *Poterius*'s Antihectick gr. xij. Syrup of Ground Ivy q. ſ. to make a Bolus.

Take of Blood-Stone, Maſtich, and Dragon's Blood ā ʒſs. *Japan* Earth and red Coral prepared ā ʒj. Balſam of *Capivi* q. ſ. Mix and make an Electuary. The Doſe is ʒj. twice a Day in the *Fluor Albus*.

Take of Rhubarb powdered ʒiij. the mercurial *Panacea* ʒj. Balſam of *Capivi* ʒiſs. Mix and make an Electuary, to be taken to ʒj. every Day, Morning and Evening in a Clap, a mercurial Purge being given every fourth Day.

However, in a febrile Efferveſcence we ought to be cautious of uſing Balſams internally; becauſe they raiſe an inflammatory Heat in the Blood: Whence by giving them improperly, or too long, or in too large a Doſe, a Fever is excited, and Hemorrhages, Head-Aches, Palpitations of the Heart, and Inflammations of the Bowels ſucceed. They likewiſe often occaſion Loſs of Appetite, and bad Digeſtion; foraſmuch as by their reſinous Particles they render the Ferment of the Stomach inert. Wherefore they ought to be given at a good Diſtance from Meals, and in moderate Doſes.

ARTIC.

ARTIC. V. *Of* TURPENTINE.

In the Shops the Name of Turpentine is given to four Kinds of resinous Juices; though it properly belongs to one only, which is the Juice of the *Terebinthus*. These four Sorts of Turpentine are that of *Chio*, *Venice*, *Strasburgh*, and the *Common*.

1. *Terebinthina Chia vel Cypria*, *Off.* Πρίνη τερμινθίνη, *Græcor.* *Terebinthina*, *Latinor.* *Terebenthina vel Terminthina*, *quorumd.* and corruptedly *Ferbentina*, *Ferebinthina*, *Trebenthina*, *Trementina*, or *Fermentina*. *Helc Alimbath* or *Helt Alimbach*, *Arab.* *Chio*, or *Cyprus*. Turpentine is a liquid resinous Juice which flows from the *Terebinthus*, of a whitish Colour, yellowish, glassy, or whitish inclining a little to blue, sometimes transparent, of a thicker or thinner Consistence, tough and glutinous, sometimes so dry that it is reducible to Crumbles by rubbing betwixt the Fingers, though oftener yielding and sticking to them, like a thicker Sort of Honey. The Smell is acrid, and not unpleasant, pretty much like the Smell of *Venice* Turpentine, especially when it is rubbed in the Hands or thrown upon Gledes; and the Taste is moderately bitter and acrid. The best is brought from the Islands of *Chio* and *Cyprus*, whence it took its Name. It was known and frequently used by the ancient *Greeks*.

The Tree is distinguished, *Terebinthus Vulgaris*, C. B. P. *Terebinthus*, J. B. It grows plentifully not only in *Chio* and *Cyprus*, but also in *Languedoc*. The Turpentine is got by cutting or boring into the Trunk and Branches of the Tree, from whence it distils in the Form of a liquid Juice, which is afterwards gradually inspissated, and in Time becomes dry.

Kæmpfer ſpeaks of an oriental Turpentine, not unlike this, which is got in *Perſia*, *Media*, &c. It is much uſed by the Eaſtern People, being very common in the Shops in *Turkey*, *Perſia*, and *Arabia*. In the *Turkiſh* Language it is called *Sakkis*, and in the *Perſian*, *Kondruun*.

In a chymical *Analyſis*, two Pounds and an half of *Chio*-Turpentine yielded nine Ounces of thin limpid Oil of the Colour of Water, five Ounces of yellowiſh Oil, and twenty two Ounces of thick reddiſh Oil, with ſixty Grains of acid Liquor. The *Caput mortuum* left behind in the Retort weighed ſeven Drachms and thirty Grains, which was calcined for eight Hours, but no fixt Salt was afterwards obtained from it.

The Uſe of this Turpentine, as of the others, is either external or internal. Externally it is emollient, digeſtive, diſcutient, and reſolvent; deterges Ulcers, and heals freſh Wounds; but with us it is ſeldom thus applied, becauſe the Turpentine of the Larch-Tree is more common, cheaper, and nothing inferior in Virtue: Yet as this Sort is leſs acrid, it is often met with in Preſcriptions for inward Uſe. It is accounted vulnerary and balſamick, and is undoubtedly an excellent Medicine for deterging and cleanſing internal Ulcers; is given to Advantage in Exulcerations of the Lungs, Stomach, Inteſtines, Liver, Kidneys, Bladder, and the other Bowels, and is good in an old Cough and recent Conſumption. It has a diuretick Property, giving a violet Smell to the Urine, and is ſerviceable in Heat or Suppreſſion of the Urine, or in nephritick Pains, when they proceed from a glutinous and acrid Serum. It frequently removes Gravel by diſſolving the ſlimy Matter which envelopes and holds it together: But we muſt always obſerve not to give it before the Inflammati-

on has been quieted. It ought likewiſe to be omitted in Caſe of a Stone in the Kidneys too large to paſs through the Ureters, for then it is either entirely uſeleſs, as having no lithontriptick Qualities, or it cauſes perhaps an Inflammation of the Part affected, which before had a Tendency thereto. However, ſome Phyſicians preſcribe it to prevent nephritick Diſorders to be taken a long Time together, whereby the viſcid Serum, which would otherwiſe form itſelf into ſtony Concretions, is diſſolved. It is moreover greatly extolled againſt the Gout and all other Diſeaſes of the Joints, the Quantity of an Haſel-Nut, as *Avicenna* directs, being taken every Morning faſting: And it is no Wonder that a Medicine which is good in the Stone, ſhould be likewiſe ſerviceable in the Gout, ſince theſe Diſeaſes are very near a-kin, having both the ſame continent or material Cauſe; whence they are frequently obſerved to change into each other. This Turpentine is alſo purgative. *Galen* reckons it a good Purge for old People. He uſed to give the Quantity of a large Filberd or more; and ſome give it to half an Ounce or upwards: But it is ſeldom ordered for this Purpoſe in the preſent Practice. The Doſe is generally from ʒſs. to ʒiſs. in a Bolus, or diſſolved with a little of the Yolk of an Egg in an aqueous Vehicle. Sometimes it is boiled to a thick Conſiſtence and made into Pills; but as the ſpirituous Parts of the Turpentine are greatly evaporated by Decoction, this Management is thought improper. From *Chio* Turpentine may be prepared a Spirit, an Oil, and a Reſin or Colophony; but theſe Preparations of it are ſeldom found in the Shops, becauſe *Venice* Turpentine, which is not ſo ſcarce, is much fitter for this Treatment, and yields a larger Proportion of Spirit.

2. *Terebinthina Veneta*, *Larigna vel Laricea*, *Off.* Λάριξ, *Græcor.* *Venice* Turpentine, or the Turpentine of the Larch-Tree, is a liquid reſinous Subſtance, viſcid and tenacious, ſomewhat thicker than Oil, but thinner than Honey, yielding with ſome Degree of Reſiſtance to the Finger, and running from it equally every Way. It is ſomething tranſparent like Glaſs, of a yellowiſh Colour, and fragrant, acrid, reſinous Smell, not unpleaſant, though a little ſtrong. The Taſte is ſubtile, and bitteriſh; more acrid and hotter than *Chio* Turpentine. It ought to be freſh, liquid, tranſparent, whitiſh, free from Filthineſs, and of ſuch a Conſiſtence as to continue upon the Nail where it is put without running. It is called the Turpentine of *Venice*, becauſe it was formerly brought from that Place, but at this Time it comes from *Dauphiny* and *Savoy* *. This Reſin was known to the ancient *Greeks*, and in the Time of *Galen* was ſometimes ſold, as was alſo the Turpentine of the Fir-Tree, for the true Reſin of the *Terebinthus*.

The Tree producing *Venice* Turpentine is called *Larix*, *folio deciduo*, *conifera*, J. B. 1. 265. *Larix*, *Dodon.* 868. It grows upon the *Alps* of *France*, *Savoy*, *Griſon*, *Styria* and *Carinthia*, as alſo upon the *Apennine* Hills in great Plenty. The Turpentine runs from it either of itſelf or by Inciſion in the Spring and Autumn; and in ſome Seaſons a Sort of Manna exudes from it, which is therefore called *Manna Laricea*. The ſame Tree likewiſe produces Agarick. But of theſe in their proper Places.

* "What goes now under this Name (in our Shops) is ge-
" nerally brought from *New England*. Whether produced from
" the Fir, or Pine, or Spruce Trees, or from them all is uncer-
" tain. The finer Sort comes very near the *Venice* Turpentine,
" both in Colour and Conſiſtence, as the more ordinary is like
" what is gotten from the Pine." *Miller*'s *Botanicum Officinale*. Upon this Account, I ſuppoſe, *Venice* Turpentine is now ſtruck out of the Catalogue of the College.

In a chymical *Analyſis*, two Pounds and eleven Ounces of *Venice* Turpentine diſtilled in B. V. yielded one Drachm and an half of ſubacid Phlegm; and ten Ounces, ſix Drachms and an half of ſubtile clear Oil. The *Reſiduum* being put into a Retort, and diſtilled with a reverberatory Fire, which was gradually increaſed, gave up two Ounces and two Drachms of acid Phlegm: A little urinous Phlegm; with twelve Ounces, two Drachms and fifty four Grains of yellowiſh Oil ſomething thicker than the former, and at laſt ſeventeen Ounces and four Drachms of Oil which was ſtill thicker and reddiſh. The Maſs remaining behind in the Retort was black, ſhining, ſmooth and ſpongy, and weighed ſix Drachms and twelve Grains. This being calcined in a Crucible for eight Hours, acquired a reddiſh brown Colour, weighed only twenty two Grains, was entirely void of Taſte, and yielded no Salt by Lixiviation. The Loſs of Parts in Diſtillation was about one Drachm, and in Calcination almoſt ſix Drachms. Hence it appears that this Turpentine chiefly conſiſts of ſubtile Oil and acid Salt, which are combined together ſo as to conſtitute a reſinous Compound; and that the Proportion of Earth and alkaline Salt contained in it are exceeding ſmall. In ſhort, if the Spirit of Turpentine, and the acid Spirit of Vitriol, be digeſted together for ſome Days, they change into a Reſin, like Turpentine; and this by a longer Digeſtion grows thicker and thicker, till at length it is converted into a black *Bitumen*.

We muſt obſerve that Turpentine gives a violet Smell to the Urine, not only when it is taken inwardly, or injected by way of Clyſter, but alſo when it is applied externally, or only received by the Breath into the Lungs. Hence we may conclude, that its Efficacy is principally owing to ſpi-

rituous and volatile Particles, which are eaſily diſtributed over the whole Body, which penetrate, divide, and attenuate the Maſs of Blood and other Humours, involve the acrid Salts, promote the due Secretions and Excretions, eſpecially by the Kidneys and Inteſtines, deterging and beſmearing the ſolid Fibres of theſe parts, and reſtoring their Oſcillations. And this muſt be underſtood of Turpentine in general.

Venice Turpentine has the ſame Virtues with the *Chio* or *Cyprus*, and is given in the ſame Manner. For internal Uſe we generally prefer it to the others. It is balſamick, vulnerary, diuretick, and gently purgative. In Ulcers of the Lungs, Kidneys, Bladder, and other Bowels, it is very uſeful; as alſo in a *Gonorrhœa* and *Fluor Albus*. It is of extraordinary Service in reſolving or ripening Impoſthumations of the Bowels, foraſmuch as it ſometimes draws the purulent Matter from the Part affected, and diſcharges it by Urine. *Riverius* and other celebrated Phyſicians recommend it to prevent the Stone in the Kidneys; and for this Intention it is preferable to other Diureticks, becauſe it relaxes the Belly as well as provokes Urine; whereby the more viſcid Humours are evacuated by Stool, which other diuretick Medicines would only derive upon the Kidneys. Externally it is ſo much extolled for its balſamick and vulnerary Qualities, that the Uſe thereof in Unguents and Plaiſters is almoſt univerſal. With this the Surgeons make a common and excellent Digeſtive for Wounds, by diſſolving it firſt with q. ſ. of the Yolk of an Egg, and mixing it with Oil of Roſes, or the like. Moreover, in Dyſenteries, Ulcerations of the Inteſtines, nephritick Pains, and Suppreſſion of Urine, it is injected in Clyſters to good Advantage. However, Turpentine, like all other Diureticks, requires ſome

Caution

Caution to be obſerved in giving it. When we are apprehenſive of the Approach of a Fever or Inflammation, it will be proper to order Bleeding previouſly to it, and to prepare the Patient by Medicines that deterge and relax the Stomach and Inteſtines; otherwiſe a Fever, Head-Ache, or inflammatory Heat in other Parts, may be the Conſequence. *Fabricius Hildanus*, *Cent.* 5. *Obſerv.* 59. ſpeaks of a Suppreſſion of Urine which was brought on by the Uſe of Turpentine after crude and viſcid Aliment. In the Shops, a Spirit, Oil, and Colophony, are prepared from *Venice* Turpentine after the following Manner.

Take of the pureſt *Venice* Turpentine q. v. Put it into a Glaſs Retort, leaving at leaſt two Thirds empty. Diſtil it at firſt with a very gentle Fire, and a fine ethereal Oil comes over, which is mixed with a certain Proportion of Phlegm. This is commonly called the *Spirit of Turpentine.* Afterwards by increaſing the Fire gradually, a yellow Oil riſes up into the Receiver, and then a reddiſh Oil of a ſomewhat thicker Conſiſtence. If the Fire be now taken away, and the Veſſels left to cool, a ſolid, friable, pellucid, and reddiſh Maſs is found at the Bottom of the Retort, which is termed *Colophony.* But if this reſinous Maſs be ſtill urged by a ſtronger Degree of Heat, it gives up a thick blackiſh Oil, which is called by ſome the *Balſam of Turpentine*, and a light, porous, black Subſtance is left in the Retort.

The Spirit is given inwardly, and in the Quantity of a few Drops operates powerfully by Urine. It is proper in a Stoppage of making Water from a thick

Mucus

Mucus obſtructing the Paſſages, in bloody and purulent Urine, proceeding from Ulcers of the Kidneys or Bladder; as alſo in Affections of the Lungs. *Bartholetus* recommends it in a Pleuriſy, for reſolving the Humour impacted in the *Thorax*, and carrying it off ſucceſsfully by the urinary Paſſages. The yellow Oil is ſeldom given inwardly.

Both the Spirit and Oil in external Uſe are reckoned vulnerary and balſamick. Colophony is digeſtive, reſolvent and conſolidating. It is not ſo deterſive and penetrating as the Turpentine itſelf, as having been deprived of its oily Parts by Diſtillation. Sometimes it is given inwardly, though ſeldom; but is applied externally in ſome Plaiſters.

Take of *Venice* Turpentine, ʒij. Oil of ſweet Almonds, ℥ſs. mix. Let this be given in an Aſthma, nephritick Diſorders, and Suppreſſion of Urine.

Take of *Venice* Turpentine ʒiſs. Liquorice-Root powdered, or Sugar, q. ſ. to make a Bolus. This is proper for Ulcers of the Lungs, Kidneys, or Bladder, *&c.*

Take of Rhubarb in Powder ʒſs. *Venice* Turpentine, q. ſ. Mix and make a Bolus to be given in the *Fluor Albus*.

Take of *Venice* Turpentine ℥ſs. the mercurial *Panacea*, ʒj. Rhubarb ʒiij. Make an Electuary. The Doſe is ʒj. twice a Day in a Clap, when the Patient has been previouſly treated with proper Remedies.

Take of *Venice* Turpentine ʒvj. or ℥j. diſſolve it with the Yolk of an Egg in ℔j. of Whey, or any ſuitable Decoction for a Clyſter.

3. *Terebinthina abiegna ſeu Abietina*, *Terebinthina Argentoratenſis*, *Off.* Πίτυλνη ἐλαΐνη, *Græcor. Straſburg* Turpentine,

Turpentine, which is the resinous Juice of the Silver-Fir, is thinner when it is fresh than *Venice* Turpentine, clearer, and of a more agreeable bitter Smell, resembling in some Measure the Smell of Citron-Peel: But by Age it grows thick and yellow. It is brought from *Strasburg*, and therefore generally goes by the Name of that Town.

The Tree, from which it is got by making Incisions along the Trunk, is called *Abies, Taxifolio, fructu sursum spectante, Inst.* R. H. 585. *Abies, conis sursum spectantibus, sive Mas*, C. B. P. 505. *Abies Fœmina, sive* ἐλάτη θήλεια, J. B. 1. 231. It grows in great Plenty in *Germany*, and the Northern Countries.

The Turpentine, being at first liquid, drops down from the Tree, but at length it gradually thickens and ceases to flow; and the Incisions (which are usually three Fingers broad, and made at the Distance of about four Inches from each other on all Sides of the Trunk) after two or three Years are filled with a thick Resin, of which the *Germans* make a Kind of Pitch, by melting it in Furnaces.

A resinous Juice is likewise got from certain Tubercles or Knobs which are found within the Bark, of a more agreeable Smell than the Resin of the Trunk. When it is dry, it somewhat resembles Frankincense, both in Colour and Smell, and is sometimes used in its Stead. It is distinguished by the Name of *Lachryma abiegna*, or *Oleum abietinum*, and is greatly valued, but is scarce, no more being usually obtained from each Tubercle than one or two Drops, according to *Bellonius*, who tells us, that the Peasants get it by applying the Mouth of a Cow's Horn to the Tubercles, and so expressing the Juice; by which Method they are not able to procure above four Ounces a Day.

Strasburg

Straſburg Turpentine has the ſame Principles and much the ſame Virtues as the *Venice*; though as it is of a more acrid and bitter Taſte, and thinner Conſiſtence, *C. Hoffman* is of Opinion that it conſiſts of ſomewhat finer Parts, and on that Account prefers it to *Venice* Turpentine for deterging inward Ulcers: But he affirms, that for the ſame Reaſon it is alſo more heating, and ought therefore to be uſed with greater Caution.

4. *Terebinthina communis, et Reſina Pinea, Off.* ῥητίνη πευκίνη καὶ τροβιλίνη, *Græcor.* Common Turpentine is thicker and heavier than either *Straſburg* or *Venice* Turpentine, and not tranſparent; having a pale Colour, and the Conſiſtence of Oil which has grown thickiſh by ſtanding in the Cold. It has a ſtrong reſinous Smell, and an acrid, ſomewhat bitter and nauſeous Taſte.

It runs from ſeveral Sorts of Pines; but in *Provence* about *Marſeilles* and *Toulon*, and in *Guienne* about *Bourdeaux*, it is got chiefly from the *Pinus ſilveſtris vulgaris Genevenſis*, J. B. 1. 253. *Pinus ſilveſtris*, C. B. P. 491. The Turpentine or Reſin which flows from this Tree is two-fold; the one ouzes out of the Cones, and is therefore called *Reſina ſtrobilina*; the other is called *Reſina pinea*; being that which runs from an Inciſion made in the Trunk.

This Turpentine is ſeldom uſed in Phyſick, though its Virtues are much the ſame as of the others; but it is many other Ways uſeful in Life, as it ſerves for different Purpoſes in Trade. From this alſo are made the common Sorts of Reſin, Pitch, Tar, *&c.* Theſe are:

1. *Reſina candida*, or *Thus album*, white Reſin (vulgarly Roſin) or white Frankincenſe. This is made by letting the Turpentine lie in ſmall Trenches about the Root of the Tree till a white Cruſt is formed

formed upon its Surface by the Heat of the Sun. If this Cruſt have a brown Colour, and a Mixture of Dirt, it is called *Thus variegatum*, *Thus vulgare*, &c. Common Frankincenſe.

2. *Palimpiſſa*, dry Pitch, is what remains after Diſtillation of the groſſer Part of the Turpentine, being an hard friable Subſtance, of a reddiſh, brown Colour.

3. *Pix nigra artificialis*, Artificial black Pitch, which is made of the *Palimpiſſa* and common Tar.

4. *Pix navalis*, common Pitch, which is prepared by mixing the artificial black Pitch with *Palimpiſſa*, Beef-Suet, and common Tar, and melting them together over the Fire.

5. *Zopiſſa* or *Apochyma*. This is the *Pix navalis*, after it has contracted a Saltneſs from the Sea-Water.

6. *Pix Burgundiaca*, *Burgundy* Pitch, which is compounded of white Reſin, common Turpentine and Oil of common Turpentine melted together.

7. *Pix nigra liquida*, or *Pix liquida vulgaris*, Liquid Pitch or common Tar is got by burning the Trees when they are old, and full of Reſin; whereby the black reſinous Juice runs out into Trenches or Veſſels prepared to receive it. This is done either when the Trees are ſtanding, or in Furnaces which are built for that Purpoſe.

8. *Piſſæleum*, Oil of Tar, is a black oily Liquor which riſes to the Top of the Tar after it has ſtood a while in Caſks. Sometimes another Sort of *Palimpiſſa*, or dry Pitch, is made by boiling the thicker Part of the Tar to Dryneſs.

The Smoke of all theſe reſinous Subſtances produces a black light Soot, which is called *noir de fumée*, and is often uſed in preparing ſome Colours, and in the Ink of Printers. Another Soot like it is gathered from the Burnt Lees of Oils, but this being fat and oily is not ſo much valued.

Both

Both the liquid and the dry Reſins above deſcribed are emollient, reſolvent, and digeſtive, and are uſed in many Plaiſters and Unguents for Wounds and Ulcers. The liquid Pitch, or Tar, is ſuppurative and corrects tetterous Eruptions. The harder Pitch is more powerfully drying, and preferable for healing Wounds.

Of SOLID RESINS.

ARTIC. I. *Of* BENZOINE.

Benzoïnum, *Belzoïnum*, *Belzoïm*, *Benjoïnum*, *Benivinum*, *Benivi*, *et Aſſa dulcis*, *Off.* This is a dry, indurated, brittle, inflammable Reſin, compoſed of many ſhining Particles, ſometimes yellowiſh, ſometimes whitiſh, which are compacted together into a Maſs of a reſinous fat Taſte, and fragrant ſweet Scent, eſpecially when it is burnt. In the Shops are two Sorts: The one is diſtinguiſhed *Amygdaloïdes*, being either pale, or reddiſh inclining to brown, and containing ſmall white Lumps like Almonds; the other is blackiſh, and intermixed with very few or no Spots. It is brought from the Kingdom of *Siam* in the *Eaſt Indies*, and from the Iſlands of *Java* and *Sumatra*. The *Amygdaloïdes* is the beſt, and it ought to be pellucid, fragrant, and free from heterogeneous Subſtances.

Garcias ab horto makes it appear that this Reſin was unknown to the ancient *Greeks* and *Arabians*.

The Tree is called *Belzoïnum*, C. B. P. 503. *Arbor Benzoïni*, *Grimmii Ephem. Germ. dec.* 11. *An.* 1. [*Laurus foliis enervibus*, *obverſè ovatis*, *utrinque acutis*, *integris*, *annuis*, *Linn. Hort. Cliff.* 154.] In the *Hortus Amſtelodamenſis* there is a Figure and Deſcription of a Tree under the Name of *Arbor Virginiana*, *Citriæ vel Limoniæ folio*, *Benzoïnum fundens*;

dans; which is the ſame with the former, only growing in a different Climate. The Reſin is got from Trees about five or ſix Years old by cutting the Bark quite through to the Wood, beginning at the Top near the Branches and carrying the Inciſion obliquely down the Trunk. At firſt when it flows out of the Tree, it is thin, ſomewhat glutinous, white and pellucid, but in Time grows hard, and acquires a yellow or reddiſh Colour; or if it be ſuffered to lie long upon the Bark it appears of a dark brown Caſt and full of Recrements. *Grimmius*, from whom we have taken this Account of the Manner in which it is got, tells us that the Quantity obtained from one Tree is ſeldom more than three Pounds; and that the Trees, after this becoming uſeleſs, are cut up, to make Room for others that are younger.

Benzoine affords by a chymical Treatment a large Quantity of Oil, whereof one Portion is thin, tranſparent, of a golden Colour, and fragrant, and the other is thick, having a Conſiſtence like Butter; together with a conſiderable Proportion of acid Phlegm, a little Earth, and no fixt Salt. The acid Salt, joined with ſome Portion of Earth and Oil conſtitutes an eſſential Salt, which riſes up in Sublimation in the Form of ſaline Flowers, or is drawn out by Decoction in common Water. This Salt diſſolves in boiling Water like other eſſential Salts, and when the Water is cold, it ſhoots into Cryſtals or ſaline *Spicula* at the Bottom of the Liquor. The Quantity obtained from one Pound of Benzoine by Sublimation is an Ounce and half or two Ounces, and by Decoction one Ounce.

The Uſe of Benzoine is very common in Fumigations and Perfumes. Inwardly taken it promotes Expectoration, and is of great Service in Aſthmas, Infarctions of the Lungs, and old Coughs:

But

But the Flowers, in theſe Caſes, are more particularly recommended; and have likewiſe a Virtue of provoking Sweat. Externally it is uſeful in Plaiſters for ſtrengthening the Head, Stomach, and nervous Parts which are relaxed. The Tincture is alſo uſed to cure Pimples and Redneſs of the Face.

The Flowers are prepared thus.

Take of Benzoine groſsly broken q. v. Put it into a ſubliming Pot made of glazed Earth, and fitting a Cover upon it of double Paper in the Form of a Pyramid, ſet it in a Sand-heat or over a ſmall Fire of Charcoal. The Flowers by this Means will preſently begin to riſe up and ſtick to the Paper, and are of a beautiful white ſhining Colour like Silk. The Cover muſt be taken off every Hour and another be put in its Stead, wiping out the Flowers always with a Feather, and then ſtopping them up cloſe in a Phial. The Sublimation is to be repeated till the Flowers begin to appear yellow and oily. They are given from gr. iij. to xij. for a Doſe, in ſome proper Liquor or a Bolus.

The reſinous friable Subſtance remaining after the Operation, being put into a Retort with two or three Times as much Sand and diſtilled, gives up an Oil, which at firſt in a ſmall Quantity is tranſparent and of a golden Colour; afterwards reddiſh, and at laſt black and thick. This Oil may be rectified by diſtilling it again with Water, and is reckoned balſamick, vulnerary and ſudorifick.

The Tincture is made with Spirit of Wine. A few Drops of this Tincture falling into Water render it foul and milky, for which Reaſon ſome give it the Title of *Lac Virginale*, and uſe it as a Coſmetick.

Take

℞ Take the Flowers of Benzoine and Salt of Amber ā ʒſs. Saffron ʒj. Gum Ammoniack ʒij. Conſerve of Elecampane ʒij. Mix and make an Electuary for four Doſes. Give one every ſixth Hour in an Aſthma.

ARTIC. II. *Of* CAMPHORE.

Camphora et Caphura, Off. Caphur, Arab. Κάφυρα, *recent. Græcor. et Aëtii.* The Camphore of the Shops is a reſinous, fattiſh Subſtance, growing ſomewhat viſcid under the Teeth, white, tranſparent, light, of an acrid, bitteriſh, aromatick Taſte, burning the Mouth, though with a certain Senſation of Cold, and of a fragrant Scent like Roſemary, but more piercing and ſtronger. It is ſo very volatile, that being expoſed to the open Air, it diminiſhes by little and little, and at length is entirely diſſipated. It comes from *Japan*, and the other neighbouring Iſlands.

The Tree from which it is extracted is called *Camphora Officinarum*, C. B. P. 500. *Arbor Camphorifera japonica, foliis Laurinis, fructu parvo globoſo, calyce breviſſimo*, Breyn. 2°. *Prodr. et Hort. Amſtel.* [*Laurus foliis Ovatis, utrinque acuminatis, trinerviis, nididis, petiolis laxis*, Lin. *Hort. Cliff.* 154.] In order to procure this Reſin, the Wood and Root of the Tree are cut into ſmall Pieces, and boiled in an Iron-Veſſel with a certain Quantity of Water. The Veſſel having a Cover of Straw fitted upon it, the Camphore riſes up by Decoction, and concreting upon the Straw like a white Soot, is ſhook off and compacted together into a Maſs, which ſeems compoſed of many ſemi-tranſparent, gray, reddiſh, or yellowiſh Grains, having yet a conſiderable Mixture of Earth and other Im-

purities. It is now called *Camphre brute*, and is afterwards refined by the *Dutch*, who bring it from the *Indies*, by a particular Method of Sublimation. The Proceſs, as deſcribed by *Groncvius* in his Diſſertation upon Camphore, is as follows.

They firſt bruiſe the Camphore and paſs it through a Sieve, to clear it from the Filth; then they put a Pound and half, or two or three Pounds into a low Glaſs-Veſſel or Matraſs, leaving an empty Space at the Top. The Bottom of the Matraſs is flat, and the Neck narrow. This they place upon Sand, keeping its Sides quite free. The Pot containing the Sand deſcends downwards and gradually terminates in a Point like a Cone. Under this they kindle a ſtrong Fire and keep it up till the Camphore boils like Water. Whilſt it melts they cover the Matraſs with many Folds of Cloth ſewed together, with a Hole in the Middle to receive the Neck of the Matraſs; upon which they then fix a Cone, ſomething longer than the Neck, made of a metalline Subſtance which the *Dutch* call *Blith*.

When the Camphore is entirely melted, and in a ſtrong Ebullition, they leſſen the Fire, by taking away ſome of the Coals, and by throwing Aſhes upon the reſt, ſo as to ſuffer a moderate Heat to remain. Half an Hour after the Boiling has ceaſed, they take off the Cloths and Cone, leaving only ſome Cap-Paper correſponding to the Diameter of the Matraſs, with a Hole in the Middle, to prevent its breaking by the too immediate Action of the cold Air. They likewiſe cover the Neck of the Matraſs with a Cone of Paper, and thus with a gentle Heat they keep the Camphore melted, for ſome Hours. By this Digeſtion ſome of its oily and thinner Parts are thrown off, ſo that it will afterwards concrete into a more dry and ſolid Maſs.

Having

Having ſtood a ſufficient Time in Digeſtion they raiſe the Fire again, and continue it till the Camphore riſes into the upper Part of the Matraſs; at which Time they are obliged to uſe the greateſt Caution, to hinder it from immediately filling the Neck of the Veſſel and burſting it: For this End a Rod of Iron, or Wood, is always thruſt down into the Neck to keep it open. When the Camphore is all ſublimed, they remove the Fire, and leave the Matraſs to cool. When it is cold they break it, and take out the Camphore, which from the Shape of the Veſſel reſembles a round Cake. The feculent Matter, if any were mixed with it, is found in the Bottom of the Matraſs; or if any Filth adheres to its Surface they pare it off with a Knife.

When it has been thus refined, if it be burnt in the open Air, it leaves not the leaſt Portion of Earth or Aſhes behind; but it is entirely diſſipated in Flame; a Part of which is converted into black Soot, affording no Marks of Acidity; wherein it differs from Benzoine and many other Reſins. If it be diſtilled in cloſe Veſſels, it is not reſolved into its Principles, but riſes up in Flowers like Brimſtone. It is ſoluble in Spirit of Wine and Oils, like other Reſins; and by procuring a large Quantity of common Water to the Spirit of Wine after a Solution of the Camphore, it preſently ſeparates again from it, and ſwims upon the Top of the Liquor like Snow. It diſſolves alſo, or rather melts, in Spirit of Nitrre and *Aqua Regia*, contrary to other Reſins, which always in acid Liquors of this kind become hard. Again, it diſſolves in ſtrong Oil of Vitriol, but is not converted into Oil. It likewiſe melts in Spirit of Salt, one Part of it becoming a whitiſh viſcid Oil, the other riſing in Sublimation. The Salt of Tartar and Spirit of Sal

Ammoniack are altogether incapable of changing it. Whence it appears that Camphore is a Reſin of a peculiar Nature, conſiſting of oily and acid Particles; and that the acid is ſo very fine and ſubtile as to be diſcoverable only by Deflagration.

Neither *Dioſcorides*, nor *Galen*, nor any of the ancient *Greeks*, before *Aëtius*, have mentioned it; but the *Arabians* were well acquainted with its Uſe.

Authors diſpute much about its Quality, ſome aſſerting that it is hot, others that it is cold. They who aſſert that Camphore is cold, alledge as an Argument, that it extinguiſhes Luſt and Venery; that it cures Ophthalmies, Inflammations, and Burns; and likewiſe creates a Senſation of Cold when applied to the Part affected. The others, on the contrary, argue that it is hot from its great Inflammability, its fragrant, aromatick Scent, its piercing Taſte, and the Fineneſs and Volatility of its Parts. And this Opinion is the more probable: For though it be a common Proverb,

Camphora per Nares caſtrat odore Mares,

the Truth of it, however common, may reaſonably be called in Queſtion; ſince it hath been obſerved that many People, who are employed all their Lives in *Japan* in procuring it from the Trees, and in *Holland* alſo in the Purification of it, have yet no apparent Impotency; being often the Fathers of many Children. It is true, indeed, that the Force of Nature in ſome Perſons hath been impaired, and even deſtroyed by a long Uſe of Camphore; but others on the contrary, who have taken it in order to moderate their Deſires, have afterwards complained that they were more laſcivious than before. Therefore, though this Drug has

a Pro-

a Property which renders it cooling in Inflammations and Fevers, it does not produce this Effect immediately of itſelf, but only *per Accidens*, that is by ſoftening the Acrimony of the Humours, removing their Stagnation, reſolving their Coagulation, and promoting their Diſcharge by the cutaneous Pores, or by driving them back into the Circulation by their proper Veſſels; ſo that the Cauſe of the Inflammation being removed, there follows of Conſequence a Ceſſation of Heat and Pain in the Part affected: And this is no more than what we experience every Day from Spirit of Wine, and other Applications, which by all Perſons are allowed to be hot.

Camphore is much uſed both internally and externally. The Virtue thereof internally is diaphoretick and anodyne, reſiſting Poiſons and Malignity of the Humours; wherefore it is frequently given in the Plague, in putrid Fevers, and malignant Diſtempers. It provokes the *Menſes* and Urine; and is ſerviceable in uterine Suffocations. For this Intention it is taken either in Subſtance, or is ſet on Fire and quenched in ſome hyſterical Water, and ſo drank; or elſe is diſſolved in Clyſters by the Means of Oil. It cures Ulcers of the Womb, Kidneys and Bladder; and is commended in a *Gonorrhœa* and *Fluor Albus*. Moreover, Dr. *Groenvelt*, in his Treatiſe *De tuto Cantharidum Uſu interno*, extols it as an excellent Corrector of *Cantharides*, aſſerting that it has a wonderful Efficacy in abating the Heat of Urine which is occaſioned by giving them inwardly. The Doſe is from gr. iij. to ʒj. in a Bolus, or diſſolved in q. ſ. of the Oil of ſweet Almonds. It is applied externally to paralytick Limbs, in rheumatick and gouty Pains, as alſo to allay Inflammations and *St. Anthony's Fire*, to reſolve Tumours, remove Putrefaction, prevent Gangrenes,

grenes, and to cure Burns. In theſe Caſes it is commonly diſſolved in Spirit of Wine; and ſometimes it is mixed in Froutales, Fomentations, Collyriums, Unguents and Cerates. It is ſaid likewiſe to be good againſt intermitting Fevers, if one Drachm be tied up in a Rag, ſo that it may hang from the Neck upon the Pit of the Stomach.

But we muſt obſerve that Camphore ought not to be uſed without Caution; foraſmuch as being taken in larger Quantities than convenient, it oppreſſes the Head, produces Wakefulneſs, and diſpoſes the Blood to Inflammation.

Take Camphore, the Roots of Butterbur and Biſtort, ā ʒj. calcined Hartſhorn ʒij. Mix and make a Powder. The Doſe is ʒj. in the Plague and malignant Fevers.

Take of Camphore gr. xv. Oil of Cinnamon gutt. iij. purified Opium gr. j. Conſerve of Roſemary-Flowers q. ſ. to make a ſweating Bolus.

Take of Camphore gr. xij. Conſerve of Marigold-Flowers q. ſ. Make a Bolus for a Suppreſſion of the *Menſes*.

Take Camphore, Aſſa fœtida and Caſtor, ā gr. v. Myrrh and Aloes powdered ā gr. x. Oil of Amber gutt. iij. Conſerve of Rue q. ſ. to make a Bolus.

Take of Camphore ʒij. *Venice* Turpentine ℥ij. Dragon's Blood ʒiij. Mix them well into a Maſs for Pills. The Doſe is ʒſs. in a *Gonorrhœa*.

Take of the diſtilled Water of Fennel ℥ij. Camphorated Spirit of Wine ℥ſs. Mix and make a Collyrium to be uſed in an Ophthalmy, *Glaucoma*, and beginning Cataract.

Take

Take of the Tincture of Myrrh with Aloes ʒiv. camphorated Spirit of Wine ʒj. Make a Mixture; which is excellent for cleanſing fœtid and putrid Ulcers, eſpecially where there is any Tendency to Sphacelation.

Take of the Sugar of Lead ʒſs. Camphore ʒſs. Oil of Linſeed and Oil of Eggs ā ʒj. Make a Liniment for Burns.

Take of the Oil of Worms ʒiij. camphorated Spirit of Wine ʒj. Oil of Turpentine ʒſs. Spirit of Sal Ammoniack ʒj. Mix and make a Liniment for rheumatick Pains and Palſies.

Camphorated Spirit of Wine is made by diſſolving ʒiſs. of Camphore in ℔j. of the Spirit in a large Glaſs-Veſſel, letting it ſtand in the Sun or in warm Sand. And after the ſame Manner is made camphorated Brandy.

An Oil of Camphore is prepared thus.

Take of Camphore rubbed into a groſs Powder ʒiij. Spirit of Nitre ʒvj. Let them ſtand together to digeſt in B. M. in a Glaſs-Veſſel well ſtopped, ſhaking the Veſſel now and then, till the Camphore is quite diſſolved. Then ſeparate the Oil, which ſwims at the Top of the Spirit in the Quantity of ʒiv. This Oil is commended for ſtopping the *Caries*, and forwarding the Exfoliation of Bones.

There is another Sort of Camphore much eſteemed by the eaſtern People, but is never brought into *Europe* by reaſon of its Scarceneſs. It is called *Camphora Borneenſis* or *Sumatrana* from the Places where it is found. The Tree which produces it is diſtinguiſhed *Arbor Liono dicta Sladi: Arbor camphorifera Sumatrana, foliis Caryophylli aromatici,*

longiùs mucronatis, fructu Majori oblongo, Calyce ampliſſimo Tulipæ figuram quodam modo repræſentante, Breyn. 2°. *Prodr.* This Camphore differs from the former in that it is taken out of the Tree in ſmall Pieces or *Lamellæ* without any further Preparation, and continues in the open Air without waſting away. Again, other Sorts of Camphore are obtained from ſeveral Plants in the *Eaſt Indies*; as from the different Species of the Cinnamon-Tree, by diſtilling the Bark of the Roots in a large Quantity of Water: As likewiſe from the Roots of the *Zedoaria Zeylanica Camphoram redolens*, the *Mentha Zeylanica*, the *Scœnanthum Arabicum*, *Perſicum*, and other Vegetables. The Camphore of the Cinnamon-Tree is reckoned better than the common, but very little comes to us. The other Sorts are never uſed in Phyſick.

ARTIC. III. *Of* ELEMI.

The Elemi of the Shops is of two Sorts. The one is called *Elemi ſeu Elemni verum*, or *Æthiopicum*; the other *Elemi ſpurium*, or *Americanum*. They are generally called Gums, though improperly, being both of them Reſins, eaſily taking Fire and diſſolving in Oil.

1. *Elemi verum ſeu Æthiopicum*, *Off.* The true Elemi of *Æthiopia* is a Reſin of a yellowiſh Colour, or whitiſh with a ſmall Caſt of Green, formed into cylindrical Glebes and commonly wrapped up in broad arundinaceous Leaves, or the Leaves of a Sort of Palm-Tree. Towards the outer Part it is harder, though not perfectly dry, within ſofter and ſomewhat tough; of a ſtrong Smell, but not unpleaſant, being ſomething like that of Fennel. This Sort is ſeldom found in the Shops. We have as yet no certain Account of the Tree to which it belongs,

belongs, but the moſt probable Opinion is, that it is a wild Olive growing in *Æthiopia*.

2. *Elemi Americanum*, *Off.* The *Elemi* of *America* is a Sort of Reſin which is ſometimes whitiſh, and ſometimes greeniſh, or yellowiſh, ſomewhat tranſparent, of a ſofter or harder Conſiſtence, and a ſtrong reſinous Smell. This is very common in the Shops; and is made Choice of freſh, tranſparent, greeniſh, fat, tough, and of a good Smell. It is brought from *Braſile*, *New Spain*, and the Iſlands of *America*.

The Tree from which this is obtained by making a Wound in the Bark, is called *Icicariba Braſilienſibus*, *Marcgr.* 98. *Icicariba*, *et illius gummi Icica*, *ſive Elemni*, *Piſon.* 122. *Arbor Braſilienſis gummi Elemi ſimile fundens*, *foliis pinnatis*, *floſculis verticillatis*, *fructu Olivæ figurâ et magnitudine*, *Raii Hiſt.* 1546.

In a chymical *Analyſis* three Pounds of Elemi yielded three Ounces, two Drachms and ſixty ſix Grains of Liquor, which at the firſt coming over had the Smell and Taſte of the Reſin, but afterwards was acid, changing the Tincture of Turnſole to a red Colour; then ſix Ounces, ſix Drachms and thirty ſix Grains of tranſparent reddiſh Oil, and twenty nine Ounces, ſix Drachms and thirty ſix Grains of thicker Oil of a brown Colour. The black Subſtance remaining in the Bottom of the Retort, like a Coal, weighed three Ounces, ſeven Drachms and thirty ſix Grains. This being calcined in a Crucible with a reverberatory Fire for ſixteen Hours, till it gave over ſmoking, left only three Drachms and ſixty Grains, and the black Colour was converted into a reddiſh yellow. At the laſt were obtained, by Lixiviation, eighteen Grains of fixt neutral Salt. The Loſs of Parts in Diſtillation was four Ounces and forty eight Grains, and

in Calcination three Ounces, two Drachms and forty eight Grains.

It afforded no Marks of alkaline Salt; whence it appears that this Refin, like almoſt all others, is compounded of a ſubtile acid Salt, and both a thin and thick Oil, intimately combined.

Elemi has a Virtue of reſolving Tumours, deterging Ulcers, and aſſwaging internal Pains; is excellent for reſiſting Corruption, and is particularly commended in Wounds and Contuſions of the Head, and Tendons. It is ſeldom given inwardly, though ſome greatly extol it as a Diuretick. The *Balſamum digeſtivum*, or *Linimentum Arcæi*, which is very much uſed by Surgeons is made thus.

Take Elemi and *Straſburg* Turpentine ā ℥iſs. old Mutton Suet, depurated and melted, ℥ij. old Hog's Lard melted ℥j. Mix and make a Liniment ſ. a.

Many reſinous Subſtances of a yellowiſh, whitiſh, or aſhy Colour, are brought from *America* for Elemi; but as they are inferior both in their Smell and Virtues they are eaſily diſtinguiſhed from it.

ARTIC. IV. *Of* LADANUM.

Ladanum vel Labdanum, *Off.* Λάδανον, *Græcor. Loden et Laden*, *Arab.* This is a reſinous Subſtance, of which we have two Sorts: The one is formed into large Cakes, ſoft, approaching to the Conſiſtence of a Plaiſter, or Extract, becoming tough and ſticky betwixt the Fingers, of a pleaſant Smell, a blackiſh red Colour, and covered with Bladders or Skins: The other Sort is in Rolls like *Spaniſh* Liquorice, or twiſted up much in the ſame Manner with ſmall Wax-Candle, dry, hard, and brittle, yet growing

growing ſomewhat ſoftiſh by Heat, mixed with black Sand, of a black Colour, and weaker Scent. This Sort is the more common, but the firſt is better, which ought to be free from Mixture, inflammable, by Heat ſoon growing ſoft, and of a ſweet pleaſant and ſtrong Smell, eſpecially when it is burnt. It is brought from *Candy*, and other Iſlands of the *Archipelago*. The ancient *Greeks* were not acquainted with it.

In the Summer-Time it exudes out of the Leaves of a Shrub, which is called *Ciſtus Ladanifera, flore purpureo, Cor. Inſt.* R. H. 19. *Ladanum Creticum, Prof. Alpin. Exot.* 88. *M. Tournefort* mentions another *Species* of it (if it may be ſo called) differing only from the preceding in the Largeneſs of its Flowers, which he diſtinguiſhes, *Ciſtus Ladanifera, Orientalis, flore purpureo majore, Cor. Inſt.* R. H. 19. This laſt grows in *Pontus*, and the other is very common in ſome Parts of *Candy*. In the Time of *Dioſcorides* Ladanum was gathered after two different Ways. He tells us that when Goats browſe upon the Leaves, the viſcous Juice which ouzes out of them, ſticks and gathers by Degrees upon their Beards and the Hair of their Legs, which is afterwards taken off by Combs. The other Method was by drawing a Rope over the Shrubs, and ſo collecting the Exudation. But in the Days of *Bellonius* it was gathered, and is ſtill according to *M. Tournefort*, by a particular Sort of Inſtrument, which the *Greeks* inhabiting *Candy* term Ἐρασίβι. This Inſtrument is ſomething like a Rake without Teeth, having many leathern Straps or Belts faſtened to it, which they ſweep backward and forward over the Leaves of the Shrub, and the reſinous Moiſture, by this Means adhering to them, is afterwards ſcraped off with Knives. The gathering it in this Manner is a very laborious Employment, being

being commonly done in the Dog-Days; though we are told that one Man, by following his Buſineſs cloſely, may collect above three Pounds in a Day. However, it is very hard to come at any which is entirely pure; for they who get it, being not content with their Gains, to encreaſe its Weight mix with it a Sort of black Sand, wherein is contained a certain Proportion of Iron.

In a chymical *Analyſis* two Pounds of twiſted Ladanum yielded two Ounces, two Drachms, and forty eight Grains of reddiſh Oil, of a pleaſant Scent and acid Taſte; three Drachms and an half of brown Liquor which was alkaline, coagulating the Solution of corroſive Sublimate and fermenting with Acids; four Drachms and twenty four Grains of reddiſh, tranſparent, odorous Oil; with one Ounce and three Drachms of brown Oil, ſomewhat empyreumatick and thick. The black Subſtance which was left behind weighed twenty ſix Ounces and ſeven Drachms; and being calcined by a reverberatory Fire in a Crucible for eight Hours acquired a browniſh yellow Colour, which afterwards became reddiſh by continuing the Calcination for ſix Hours longer. At the laſt it appeared to be nothing more than an inſipid Sand, affording ſcarce any fixt Salt at all. This Sand without doubt had been mixed with the Ladanum.

Hence then it is evident that Ladanum conſiſts of a thin and thick Oil, combined with an eſſential ammoniacal Salt; and moreover that in two Pounds are contained about twenty four Ounces of Sand, ſo that one Pound of common or twiſted Ladanum produces hardly four Ounces of the pure Reſin. As the Sand has ſome Particles of Iron in it, it is no wonder that it changes red in Calcination like the *Crocus Martis*.

Ladanum in external Application is emollient, digeſtive, attenuating, and reſolvent. Internally it aſtringes, fortifies and aſſwages Aches or Pains: But the internal Uſe of it is not ſo common. Sometimes it is preſcribed to ʒj. to ſtrengthen the Stomach, to help Concoction, againſt Defluxions of Serum and Catarrhs, and in Dyſenteries. In a cold *Intemperies* of the Brain and Weakneſs of the Stomach, it is recommended to be applied over the Parts, and to be put to the Temples in the Tooth-Ache. It is reckoned good for Diſtempers of the Womb, and for old ſinuous Ulcers attended with Swelling or Hardneſs. It is uſed likewiſe in Fumigations and Perfumes; and to correct a noxious Air is made into Balls with Muſk, Ambergreaſe, and other Ingredients.

Take of pure Ladanum ʒj. Nutmeg ʒſs. Cardamom ℈j. Maſtich gr. viij. powdered Jalap ℈j. Oil of Cinnamon gutt. vj. Syrup of Stœchas q. ſ. Make a Maſs for Pills. The Doſe is gr. xv. or xx. at Night againſt Catarrhs from a cold Cauſe.

Take of the pureſt Ladanum ʒj. red Coral prepared ℈j. Quince-Marmalade q. ſ. to make a Bolus for Weakneſs of the Stomach and Dyſenteries.

An Oil of Ladanum is made thus,

Take of the beſt Ladanum ℔j. cut it ſmall and boil it for half an Hour in ℥vj. of Roſe-Water, and ℥iv. of the Oil of ſweet Almonds, and then ſtrain. This Oil, having a fragrant Smell, is mixed with Ointments and Pomatums.

ARTIC.

ARTIC. V. *Of* MASTICH.

Maſtiche, Maſtix et Reſina lentiſcina, Off. ῥητίνη σχινίνη, ἢ Μαστίχη, *Dioſcor. Maſtech, Arab.* This is a dry pellucid Reſin, of a yellow white Colour, concreted into Tears or Grains about as big as a ſmall Pea or a Grain of Rice, brittle, breaking immediately into Pieces under the Teeth, but afterwards by the Heat of the Mouth becoming ſoft like Wax. Being thrown upon Gledes it takes Flame, emitting an agreeable Sort of Smell. The Taſte is gently aromatick, reſinous, and ſomewhat reſtringent. It ought to be made Choice of white, or pale tending to yellow, pellucid, dry, brittle, crackly, and of a good Smell. When it is black, green, livid, or impure, it is of no Value.

It runs either of itſelf or from a Wound made in the Bark of a Tree very near a-kin to the *Terebinthus*, which is called *Lentiſcus Vulgaris*, C. B. P. 399. It grows in *Chio*, where it is cultivated with much Care, and from whence only the Maſtich of the Shops is brought; though the Tree is found alſo in other Iſlands of the *Archipelago*, and in *Spain*, *Italy*, and *Languedoc*.

In a chymical *Analyſis*, two Pounds of Maſtich afforded one Ounce, ſeven Drachms and fifty four Grains, of limpid, odorous, and acid Phlegm; two Ounces, one Drachm and twelve Grains of brown Liquor, which was more acid with a kind of Bitterneſs; one Drachm and forty two Grains of tranſparent, reddiſh Liquor, ſubacid and ſomewhat alkaline, rendering the Solution of corroſive Sublimate turbid; one Drachm of tranſparent yellowiſh Oil; two Drachms of reddiſh Oil; two Ounces, one Drachm and ten Grains of brown Oil, which was tranſparent and fluid; with twenty Ounces of

of thicker Oil, near the Conſiſtence of Honey, and of a brown Colour. The Maſs left in the Retort weighed three Ounces, of which three Drachms remained, after it had been burnt in a Crucible with a reverberatory Fire. From theſe were got, by Lixiviation, four Grains of fixt neutral Salt. The Loſs of Parts in Diſtillation was two Ounces, one Drachm and twenty ſix Grains, and in Calcination two Ounces and five Drachms.

We may conclude from this *Analyſis* that Maſtich conſiſts of a large Quantity of thick Oil, and acid Salt, with very little alkaline Salt and Earth; and that it contains but a ſmall Proportion of fine and volatile Parts.

The Inhabitants of *Chio* have this Reſin almoſt always in their Mouths, which they chew to ſtrengthen their Teeth and Gums, and to correct an offenſive Breath; and they uſually mould and bake it in their Bread to improve its Taſte. It is commended for many Purpoſes in Phyſick. It is gently aromatick, aſtringent, and ſtomachick. When the Bowels are weak or in a State of Relaxation from too much Moiſture, it greatly conduces to dry and ſtrengthen them. It obtunds the Acrimony of the Humours, both by involving the Points of the Salts, and by lubricating the Membranes; is uſeful in ſpitting of Blood and old Coughs, from ℈ſs. to ʒſs. as alſo to fortify the Stomach and ſuppreſs Vomiting; but an immoderate Uſe of it occaſions Belchings. It cures catarrhous Affections, ſtops Looſeneſſes, and weakens the Irritation of Catharticks. Being chewed in the Mouth it contracts and ſtrengthens the Gums, and draws forth Abundance of Spittle. *Simon Paulli* commends it thus againſt Catarrhs and Hardneſs of Hearing; and even prefers it to Pellitory or Tobacco; becauſe it more abundantly draws forth Spittle, and

withal has a pleaſant Smell and Taſte. He ſays it cures Deafneſs by diſlodging the peccant Matter within the Cavity of the Ear, and diſcharging it on the Palate. Externally upon the Region of the Stomach, it aſſwages colick Pains, *Nauſeas*, and Vomiting; upon the Navel is of Service in *Diarrhœas*, and Superpurgations, and upon the Temples removes Defluxions and the Tooth-Ache.

Take of Maſtich ℥ſs. Boil it in ℔iij. of Water to a Conſumption of the third Part, and give the ſtrained Liquor for common Drink in a Looſeneſs.

Take of the Conſerve of Roſes ʒj. Maſtich ʒſs. *Diacodium* q. ſ. Make a Bolus for Catarrhs and violent Coughs.

Take of Maſtich ʒſs. Jalap in Powder gr. x. *Elixir Proprietatis*, or Balſam of *Peru*, q. ſ. to make them into Pills, to be given at Night in a Catarrh.

ARTIC. VI. *Of* FRANKINCENSE.

Olibanum, *Thus*, *et Thus Maſculum*, *Off.* Λίβανος, *Theoph. et Dioſc.* Λιβανωτὸν, *Hippoc.* *Thus vel Tus*, *Latinor.* *Ronder*, *Conder*, *et Kateth*, *Arab.* This is a reſinous Subſtance, in pale, yellowiſh, pellucid Tears or Drops like Maſtich, but larger; of a ſomewhat acrid, bitteriſh, and reſinous Taſte, though not unpleaſant, and of a fragrant Smell. Being put into a Flame it immediately takes Fire, and continues flaming a long Time; but without running in the Flame like Maſtich. It immediately breaks betwixt the Teeth; but does not afterwards re-unite like Maſtich: Nor can it like That be freely turned about the Mouth, becauſe it ſticks

ſticks to the Teeth *. The Drops ſometimes concreting two and two together, ſo as to reſemble the Teſticles of Men, or the Breaſts of Women, according to their different Magnitudes, have given riſe to the Diſtinction thereof into *Male* and *Female* Frankincenſe: And ſometimes four or five are joined together in Lumps, as large as an Haſel-Nut, or larger, and adhere to a Piece of Bark, belonging to the Tree from whence the Reſin is obtained. The ſmall Grains which are rubbed off by the Colliſion of the Lumps with one another is what the *Greeks* termed *Manna of Frankincenſe:* The beſt Frankincenſe is whitiſh, pellucid, pure, ſhining, and dry. It was no Stranger to the remoteſt Antiquity, having been uſed in all Ages, and almoſt all Nations, in religious Worſhip.

The Place where it is found is not abſolutely determined; for ſome aſſert that it is to be met with only in a certain Part of *Arabia*, and others tell us that it is alſo produced in *Æthiopia* †. Of what *Species* the Tree is from whence it is got,

* Hence it may be inferred that Frankincenſe is not a Reſin, as moſt Writers have hitherto ſuppoſed, but a Gum Reſin. This has been obſerved by an ingenious Author in a Treatiſe lately printed, intitled, *A new Method for the Improvement of the Manufacture of Drugs in a Treatiſe on the Elixir Proprietatis*, P. 3. "*Geoffroy*, ſays he, when he compares *Oli-*" *banum* to *Maſtich*, unknowingly, diſcovers that it was not a " Reſin, but, what it truly is, an oily Gum, or Gum Reſin. His " Words are, *nec accenſa diffluit, ut Maſtiche. Dentibus ſtatim* " *comminuitur: verum comminuta non cogitur denuò ut Maſtiche,* " *neque ſicut ea in ore liberè volutari poteſt, cùm dentibus adhæ-* " *reſcat.* The *Saliva* mixing with it begins to diſſolve it, which " hinders the Re-union of its Parts. Were it a Reſin like Maſ-" tich, the Parts firſt divided by chewing, would re-unite by the " Heat of the Mouth, upon continuing of that Chewing."

† We have it imported to us from the *Eaſt Indies*; whence it ſeems more probable that it is got in *Arabia*, and perhaps in ſome other Parts of *Aſia*.

we are ſtill leſs certain; for we have no Accounts of it, of ſufficient Authority to be depended on, either in ancient or modern Authors.

In a chymical *Analyſis*, two Pounds of Frankincenſe yielded ſeven Ounces, ſeven Drachms and twenty four Grains of acid Phlegm, which was ſomewhat auſtere, odorous, and reddiſh; then one Ounce, two Drachms and forty ſix Grains of Phlegm, as well acid, as urinous, and of a red Colour; afterwards one Ounce, two Drachms and twenty four Grains, of tranſparent, fluid, yellowiſh and fragrant Oil; five Ounces and three Drachms of thick brown Oil; with ſix Ounces, five Drachms and thirty Grains of thicker Oil of the Conſiſtence of Honey. The black Maſs remaining in the Retort weighed five Ounces, ſix Drachms and forty three Grains, which being calcined for fifteen Hours in a Crucible, became of a reddiſh Colour, and left one Ounce, three Drachms and ſix Grains: From theſe were got by Lixiviation twenty two Grains of fixt alkaline Salt. The Loſs of Parts in Diſtillation was four Ounces, three Drachms and twenty nine Grains; and in Calcination four Ounces, four Drachms and thirty ſeven Grains. Hence it appears that there is a larger Proportion of Earth, and ſomewhat more of an ammoniacal Salt in Frankincenſe than in Maſtich; and that the ſaline and oily Parts are more intimately combined.

It is recommended internally for many Diſorders of the Head and Breaſt, in Fluxes of the Womb and Belly; in Coughs, ſpitting of Blood, Looſeneſſes, and Dyſenteries; for it ſoftens and obtunds the Acrimony of the Humours, eſpecially the Lymph when overſtocked with ſaline Particles. The Doſe is from ℈j. to ʒj. or ʒij. It is reckoned a ſingular Specifick againſt a Pleuriſy, and in particular when the Diſeaſe is epidemical. For this

End

End *Quercetanus*, in his Diſpenſatory, directs an Apple to be ſcooped hollow, ſo as to contain one Drachm of Frankincenſe in Powder, and then to be ſtopped up and roaſted under Aſhes: The Patient is to take the Apple with the Frankincenſe, drinking ℥iij. of the diſtilled Water of *Carduus benedictus* immediately after, and then to keep himſelf well covered in Bed to ſweat. *Riverius*, in his Obſervations, aſſures us that he has been Witneſs to the Succeſs of this Remedy in many Perſons, who being reduced to Extremity were relieved in a ſhort Time, either by ſweating plentifully, or by a free Diſcharge of Matter from the Breaſt. I likewiſe have had recourſe to this Remedy, and often, though not always, with good Succeſs, the Patient having been twice or thrice let Blood before it was taken. In Caſe the firſt Doſe be not ſucceeded by Sweat, it ought to be repeated about ſix Hours after.

Externally it is uſed in Fumigations for the Head in Catarrhs, Giddineſs and Defluxions of Rheum upon the Noſtrils, and is ſerviceable againſt the falling down of the *Rectum*, being burnt in a Cloſe-ſtool. It is good in Wounds of the Head and Nerves, and to incarn and cicatrize Ulcers; which Virtues give it a Place in many vulnerary and healing Plaiſters and Ointments. *Matthiolus* extols it as a ſovereign Remedy againſt Redneſs of the Eyes, or Bleareneſs. He orders a Lump of Frankincenſe, ſtuck upon an Iron-pin or the like, to be ſet on Fire in a Wax-Candle, and to be ſuddenly quenched in four Ounces of Roſe-Water, and ſo alternately for thirty Times. The Water afterwards, being ſtrained through a clean linen Rag, is to be applied to the Corners of the Eyes every Night with a Feather. If the Diſorder be very painful, an equal Quantity of Woman's Milk muſt

be mixed with the Roſe-Water. A Liquor is got from Frankincenſe *per deliquium* by putting the Powder into the boiled White of an Egg while it is hot, and hanging them together in a Cellar. This Liquor is good to obliterate Scars and Spots of the Face. Moreover, the Oil which riſes from Frankincenſe in Diſtillation is by ſome Perſons accounted a very efficacious Remedy in a Conſumption.

We muſt take Notice that *Dioſcorides* looks upon the immoderate Uſe of Frankincenſe to be dangerous, aſſerting that in Health it occaſions Madneſs, or even Death, when drank in a large Quantity with Wine. But *Galen* and the other Writers in Phyſick have been entirely ſilent upon this Quality; and no Inconvenience is obſerved from uſing it in common Practice.

Take of Frankincenſe in Powder ʒſs. Flowers of Sulphur ʒj. candied Ginger or Conſerve of Smallage q. ſ. to make a Bolus for an Aſthma.

Take of Frankincenſe ʒj. Troches of Agarick ℈iv. Make ten Pills with q. ſ. of the Juice of Hyſſop. Let one be taken every Night at Bed-time in a Catarrh, or Cough proceeding from a Defluxion of Phlegm.

Take Frankincenſe and Maſtich ā ʒij. *Armenian* Bole ʒj. red Coral prepared and calcined Hartſhorn, ā ʒſs. Blood-ſtone ℈ij. Mix and make a Powder. The Doſe is ʒiſs. in a Dyſentery.

ARTIC. VII. *Of* DRAGON'S BLOOD.

Sanguis Draconis, *Off.* Κιννάβαρις, *Dioſc.* Αἷμα δράκοντος, *Græcor. recent.* *Alachmen*, *Arab.* This is a dry, friable, reſinous Subſtance, eaſily melting in the Fire, inflammable, of a dark red Colour,

but being reduced to Powder of a fine Redneſs reſembling Blood, and appearing pellucid when it is ſpread into thin *Laminæ*. It is void of Taſte, and Smell alſo, except when it is burnt, and then it diſperſes a Smell not much unlike to liquid Storax. In the Shops are two Sorts: The one is in hard Drops, or in Lumps an Inch long, and half an Inch thick, which are wrapped up in Flags or Palm-Leaves. The other Sort is made into Cakes, and impure, having a Mixture of Bark, Wood, Earth, or other heterogeneous Subſtances. We ſometimes meet with it alſo ſoft and tenacious, but growing hard in Time like the others. There is likewiſe a fictitious Sort of Dragon's Blood, very often ſold in the Shops, which it is eaſy to diſtinguiſh from the true, as it is made up into round flat Cakes of a dull Colour. It is compounded of ſeveral Kinds of Gums, with a certain Proportion of the true Reſin, or of *Braſile*-Wood, to give it a Colour. In the Fire it does not take Flame, but riſes up into Bubbles and makes a Crackling; and in Water it grows viſcid, and diſſolves in the ſame Manner as a Gum. This is altogether unfit for Uſe. The beſt Dragon's Blood is in pure, ſhining Drops covered with Leaves, inflammable, and of a fine crimſon red Colour, when reduced to Powder.

Dragon's Blood was known to the ancient *Greeks* by the Name of *Cinnabar*; and the Cinnabar of the Moderns was in thoſe Ages called *Minium*.

In the Time of *Dioſcorides* ſome were of Opinion that this Drug was the indurated Blood of a Dragon. *Dioſcorides* indeed rejects this Notion as falſe, though he does not inform us himſelf what it is. However, it has long ſince been diſcovered to be the Juice of a Tree. We are told by *Monardus* that this Tree took the Name of *Draco* from its

having the Figure of a Dragon upon the Fruit; but the Name of the Tree, I rather think, has given Occaſion to ſuppoſe the Reſemblance, which perhaps is no more than imaginary. But leaving this to the Deciſion of others, we muſt obſerve that the Writers in Botany diſtinguiſh four *Species* of Trees, from which the officinal Dragon's Blood is procured.

The firſt is the *Draco Arbor*, *Cluſii Hiſt.* 1. C. B. P. 505. *Palma prunifera, foliis Yuccæ, è quâ Sanguis Draconis Officinarum*, *Commel. H. Amſtel.* It grows in the *Canary Iſlands*, where the Juice in the Dog-Days flows of itſelf through the Bark which is commonly full of Chinks, and in a ſhort Time grows hard and dry with the Sun.

The ſecond, *Palma Amboinenſis*, *Sanguinem Draconis fundens altera*, *foliis et caudice undique Spinis longis*, *acutiſſimis*, *nigris armata*, *D. Sherard*, *Dale pharmacol. Supplem. Arundo farcta Indiæ orientalis Sanguinem Draconis manans*, *Hiſt. Oxon. Palma-Pinus ſive conifera*, J. B. 1. 398. *Arundo Rotang*, *Bontii: Rottani Dsjerenang*, *Indorum: Arundo farcta ſeu Palma conifera ſpinoſa*, *Kæmpfer. Amæn. exotic.* 552. This Tree grows in *Molucca*, *Java*, and other Parts of the *Indies*, bearing an oval ſcaly Fruit, bigger than an Haſel-Nut, from which is obtained the Dragon's Blood. The Method of procuring it, according to *Kæmpfer*, is this. They put the Fruit upon a Sort of Hurdle, over a Veſſel, which is half full of Water. This Veſſel being ſet upon a Fire, the Vapour riſing up from the boiling Water renders the Fruit ſoft and flaccid, by which Means a red Juice exudes and lodges upon its Surface. Afterwards it is ſcraped off with a Stick and incloſed in Follicles made of Flags or the Leaves of a ſort of Reed, which are hung upon Thread in the Air, till the Dragon's Blood is quite dry.

But others make uſe of Decoction only. They boil the Fruit, for Inſtance, in Water, which acquiring thence a red Tincture is evaporated till nothing but a thick Juice remains. This Juice is then put into Follicles like the former, and dried in the ſame Manner.

The Third is called *Ezquahuitl*, *ſeu Sanguinis Arbor*, *Hernand* 59. It grows in *Spain*, where the Dragon's Blood, at certain Seaſons, runs from it.

The Fourth is the *Draco Arbor Indica ſiliquoſa*, *populi folio*, *Angſana vel Angſava Javanenſibus*, *Commel. Hort. Med. Amſtel. rarior.* 213. It grows in *Java*, and the Dragon's Blood is got from it, by making Inciſions in the Trunk and Branches.

In the Shops the Juices obtained from the ſeveral Plants abovementioned are not diſtinguiſhed; and in what their Difference does conſiſt, if there be any that is material, I am not able to determine. The true Sort of Dragon's Blood is not ſoluble in Water, but in Spirit of Wine and oily Bodies only. In burning, the Smoke of it is ſubacid like that of Benzoine. It is a Reſin compounded of a large Quantity of thick Oil and acid Salt. It contains but a ſmall Proportion of volatile oily Parts, as we may conclude from its having neither Smell nor Taſte.

As to its Virtues, it is drying, inſpiſſating, and aſtringent, very uſeful in Dyſenteries, Hemorrhages, violent Fluxes, and inward Ulcers, being given from ʒſs. to ʒj. Externally it dries up Ulcers, agglutinates Wounds, faſtens looſe Teeth, and ſtrengthens the Gums.

Take Dragon's Blood and red Coral ā ʒj. Mix and make a Powder for ſix Doſes, giving one every fourth or every ſixth Hour againſt Spitting of Blood and Hemorrhages.

Take of Dragon's Blood ʒj. Alum ʒij. Conſerve of red Roſes ʒiij. Make an Electuary, of which the Doſe is ʒj. every fourth Hour in violent Hemorrhages.

Take Dragon's Blood, red Coral, *Japan* Earth and *Armenian* Bole waſhed, ā ʒſs. Quince-Marmalade q. ſ. Make an Electuary to be given at proper Intervals in Dyſenteries.

Take of Dragon's Blood ʒiij. Camphore ʒij. *Venice* Turpentine ʒij. Make them into Pills. The Doſe is ʒſs. for a *Gonorrhœa*.

ARTIC. VIII. *Of* STORAX.

Styrax Solidus vel Storax, *Off.* Στύραξ, *Dioſc. et Græcor. Veter. Aſtarac vel Aſtorac*, *et Lebni*, *Avicen.* Solid Storax is a reſinous Subſtance, whereof the ancient *Greeks* had two Sorts, which at this Time are alſo diſtinguiſhed in the Shops (*viz.*) *Styrax Calamita*, and *Styrax Vulgaris*.

1. *Styrax Calamita*, *Off.* Στύραξ καλαμίτης, *Græcor.* This is a reſinous, ſhining, ſolid Subſtance, in whitiſh and reddiſh Drops or Grains, ſomewhat fat, growing viſcid under the Teeth, of a reſinous ſubacrid Taſte, not unpleaſant, and of a very fragrant Scent, eſpecially when put upon warm Embers. It eaſily melts in the Fire, and is inflammable. According to *Galen* it was formerly brought from *Pamphylia*, in hollow Canes or Reeds; whence it was called *Calamita*.

2. *Styrax Vulgaris*, *ſeu in glebas compactus*, *Off.* *Styrax ruber*, *quorumd.* This is a reſinous Subſtance in Glebes or Lumps, of a reddiſh yellow or brown Colour, interſperſed with whitiſh Grains, ſhining, fat, ſomewhat viſcid, and exuding a melleous ſort of Liquor. It has the ſame Smell and Taſte with the former.

Theſe

Theſe Reſins are both the ſame; only that the firſt diſtils in Drops from ſlight Inciſions or Cracks in the Tree, and is therefore ſpeedily dried and gathered: But the other flowing from larger Wounds in much greater Quantities, requires a longer Time to dry: So that by the Heat, and Action of the Air, the Colour inclines more and more to red, or at length grows blackiſh. Storax ought to be choſen bright and pure, without any Mixture of Saw-duſt, or other Droſs, and of a fragrant Smell.

The Tree is the *Styrax folio Mali Cotonei*, C. B. P. 452. *et Inſt.* R. H. 598. It grows in *Provence* and *Italy*, where it yields but little Reſin, what we uſe in the Shops being got from Trees which grow in *Syria* and *Caramania.*

In a chymical *Analyſis* two Pounds of pure Storax yielded two Ounces, ſeven Drachms and forty eight Grains of Phlegm, which was tranſparent, reddiſh and acid, with a reſinous Smell like Storax; one Ounce, five Drachms and thirty ſix Grains of reddiſh and tranſparent eſſential Oil; two Ounces and two Drachms of thick Oil of the Conſiſtence of Honey, together with ſome volatile Salt, or ſaline Flowers like thoſe of Benzoine; (this Subſtance, which was ſomething like Butter, after ſtanding three or four Days was almoſt wholly diſſolved into Oil) at laſt three Ounces and three Drachms of fluid reddiſh Oil ſomewhat empyreumatick. The black Maſs remaining in the Retort weighed nine Ounces and five Drachms, which being calcined in a Crucible for twenty Hours, left one Ounce and four Drachms, and the black Colour was changed to a yellowiſh brown. From theſe were got, by Lixiviation, ſeven Grains of fixt neutral Salt. The Loſs of Parts in Diſtillation was four Ounces and ſixty Grains, and in Calcination eight Ounces and one Drachm. Hence it appears that Storax is a Reſin

Reſin compounded of a large Quantity of thick Oil, and a ſmaller Proportion of thin Oil, with a moderate Portion of acid Salt, and a little Earth and alkaline Salt.

As Storax contains a larger Stock of thin Oil than Benzoine, it is ſomewhat more fragrant; but not ſo deterſive, becauſe the Proportion of volatile eſſential Salt is leſs. Wherefore, notwithſtanding it may ſometimes be given to great Advantage in humoural Aſthmas, and ſtubborn Coughs, either to remove Infarctions of the Lungs or to reſolve Tubercles, yet Benzoine is accounted more efficacious. Storax, on account of its agreeable Fragrancy, is commended for ſtrengthening the Brain, raiſing the Spirits and calming their inordinate Motions; wherefore it is uſeful in cordial Antidotes. It has a Property of reſiſting Poiſons, in particular ſuch as are reckoned offenſive by their Coldneſs; though it is alſo obſerved to have an anodyne Virtue, whereby it eaſes Pains of the Head and Coughs, as it ſoftens the Acrimony of the Humours by its oily Particles. The ſame Quality renders it ſerviceable againſt Hoarſeneſs, Oppreſſions of the Head and Defluxions, being taken from ℈ſs. to ʒſs. Externally by way of Fumigation, it ſtrengthens the Head, and relieves Giddineſs and Catarrhs; and in Plaiſters it fortifies the Stomach, helps Concoction, and is conducive in Palſies; as alſo in Aches and Pains proceeding from Cold. In Fumigations and Perfumes it is often mixed with Benzoine.

Take Storax and Benzoine ā ℈j. Juice of Liquorice ℈ſs. Opium gr. ſs. *Elixir Proprietatis* q. ſ. to make them into Pills, which may be taken at Bed-time againſt an Head-Ache, *Coriza*, Catarrh, or Cough.

Take

Take of Storax ʒſs. Balſam of *Peru* ʒſs. Make a Liniment for paralytick Members, or rheumatick Pains.

A very ſweet and fragrant Oil is prepared from Storax, by letting it ſtand to macerate for three Days in a ſufficient Quantity of common Water: For the Water being drawn off firſt by Diſtillation, there riſes afterwards a yellow Oil, which in the Quantity of eight or ten Drops is an excellent Remedy for internal Ulcers, and particularly thoſe of the Breaſt.

Flowers may be obtained from it as from Benzoine, and have the ſame Virtues, but are little uſed. A Tincture is likewiſe made of it by the Means of Spirit of Wine in the ſame Manner as of Benzoine, and is good for the ſame Purpoſes.

Of GUMS.

ARTIC. I. *Of* GUM ARABICK.

Gummi Arabicum, *Off.* Κόμμι ἀκακίας ἀκάνθης, *Dioſc.* Κόμμι *propriè dictum*, *et* Κόμμι Θηβαικὸν, *Gal.* *Gummi Babylonicum*, *Gummi Saracenicum*, *Quorumd.* Gum Arabick is a Juice concreted into Grumes or Lumps as large as a Filberd or Walnut, and larger, of a round Figure, but ſometimes long and cylindrical like Worms, or like a ſmall Worm twiſted up into a Knot. They are tranſparent, of a pale yellow Colour, or entirely yellow, or red, on their Surface generally wrinkled, brittle, and within ſhining like Glaſs. They grow ſoft in the Mouth, and ſtick to the Teeth, are void of Taſte, and give a glutinous Viſcidity to Water in which they are diſſolved. This Gum is brought from *Egypt*, *Arabia*, and the Coaſts of *Africa*. The beſt is white

white or of a pale Yellow, tranſparent, ſhining, dry, and free from Filth. It likewiſe comes to us in larger Lumps, of a reddiſh Colour, and full of Impurities, which are reſerved only for mechanical Uſes.

The Tree which produces it is called *Acacia folio Scorpioides leguminoſæ*, C. B. P. 392. *Acacia vera*, J. B. 1. 429. *Acatia Sant Akakia*, P. *Alpin. de Plant. Ægypt* 15. *Acacia Ægyptia*, *Fab. Columnæ in Recch. Obſerv.* 866. *Acacia Ægyptiaca foliis Scorpioides leguminoſæ*, *Siliquis albis compreſſis*, *iſthmo interceptis*, *floribus luteis*, *H. Ludg. Bat.* In *Egypt* about *Cairo*, according to *Auguſtin Lippi*, it grows in great Plenty. The Juice expreſſed from the green Pods of this Tree is the *Acacia* of the Shops; but we ſhall treat of this in its proper Place. The Gum iſſues from Fiſſures in the Bark of the Trunk and Branches, in the Form of a viſcid Juice, and in Time grows hard, not unlike the Gum which flows from Plumb-Trees, Cherry-Trees, *&c.* which have likewiſe much the ſame Qualities; but this is preferred, becauſe its Virtues, having been confirmed by longer Experience, are better known. It appears in Grumes of different Sizes and Figures, as it happens to concrete upon the Tree, being either long, or round, or ſometimes contorted like Worms: This laſt is called *Gummi Vermiculatum*, and was highly valued by the Ancients, but it differs from the reſt only in Figure.

In a chymical *Analyſis*, two Pounds of the pureſt Gum Arabick yielded three Ounces and five Drachms of clear Phlegm, without either Smell or Taſte; ten Ounces, three Drachms, and fifty four Grains of acid and reddiſh Phlegm; one Ounce, ſix Drachms, and thirty ſix Grains of alkaline Liquor; and one Ounce, five Drachms, and twenty four Grains, both of thinner and thicker Oil. The black

Maſs

Mafs remaining in the Retort weighed ſeven Ounces and ſix Drachms; which being calcined thirty Hours in a crucible by a reverberatory Fire, left one Ounce and thirty ſix Grains of gray Aſhes; from which were got three Drachms and thirty ſix Grains of fixt alkaline Salt.

Gum Arabick is void both of Taſte and Smell. It diſſolves in Water, and not in Spirit of Wine or Oils. In the Fire it does not take Flame, but is converted into a Coal. Whence it appears, that it is compounded of a neutral Salt combined with a thick Oil, and a large Portion of Earth.

By its mucilaginous Parts it ſoftens and inſpiſſates ſharp thin Lymph, and calms the too violent Motion of the Humours. It is given to Advantage in Diſorders of the Jaws, in Hoarſeneſs, Coughs, ſaline Catarrhs, Spitting of Blood, Stranguries, and bloody Urine. The Doſe is from ℈j. to ʒij. It is likewiſe ſerviceable where the *Mucus*, which covers the internal Parts, hath been abraded, as in the Jaws, Stomach, Inteſtines, Bladder, and *Urethra*; for it beſmears the Paſſages over with its mucilaginous Parts, and preſerves them from the corroſive Acrimony of the Humours. Moreover it is uſefully mixed with acrid irritating Medicines, to obtund and temper their Force. Externally, being applied to Wounds, it ſtops Bleeding. We muſt obſerve, that to reduce it conveniently into Powder, the Mortar in which it is pounded ought to be hot.

It is given either in Powder, or diſſolved in proper Liquors.

Take of Gum Arabick ʒj. Liquorice-Juice ʒſs. Sugar-Candy ℥ſs. the diſtilled Water of Orange-Flowers, q. ſ. Make them into Troches, which may be uſed in Roughneſs of the Jaws, Hoarſeneſs, and Coughs.

Take

Take of Gum Arabick ʒſs. Liquorice-Root ℈j. Make a Powder for a ſcalding Heat of Urine.

Take of Gum Arabick ʒſs. diſſolve it in ℥iij. of Scabious-Water; then add of *Venice* Treacle ℈j. *Diacodium* ℥ſs. the ſpirituous Water of Cinnamon ℥j. Let a Spoonful of this Mixture be taken now and then in the Night, againſt a Cough which is troubleſome in Bed.

Take of Gum Arabick ℥j. boil in ℔ij. of Barley-Water, till the Gum is diſſolved. With this Solution, and the Seeds of Melons, white Poppies, and Sweet Almond blanched, ā ℥ſs. make an Emulſion; to which add of the Syrup of Marſh-Mallows ℥iij. This may be drank by Glaſsfuls in any Heat of Urine whatever.

Take of Gum Arabick ʒſs. diſſolve it in q. ſ. of Penny-Royal or red Poppy-Water; then add Linſeed-Oil freſh drawn ℥j. Syrup of Marſh-Mallows, or Comfrey ℥ij. Make a Linctus ſ. a. and give it in a Cough from a Catarrh, or in a Spitting of Blood.

Another Gum, entirely reſembling Gum Arabick, is called *Gummi Senega* or *Senica*, from a Province of the *Negroes* ſituate upon the River *Senega*. It is in larger Lumps than Gum Arabick, and is now very commōn in the Shops; but from what Tree it flows, I know not, unleſs it be a certain *Species* of *Acacia*. The white and tranſparent Pieces of this Gum are frequently ſold for Gum Arabick, being not diſtinguiſhable from it either by its Appearance or Qualities. The *Negroes* often feed upon it boiled in Milk. It is moſtly conſumed here in mechanical Uſes.

ARTIC.

ARTIC. II. *Of* GUM TRAGACANTH.

Tragacantha, *Tragacanthum et Dragacanthum*, *Off.* Τραγάκανθα, *Dioſc.* *Chitica*, *Itica*, *Chateth*, *Alcuted*, *Alchatad*, *Arab.* This is a gummous Juice in long Threads, or Fillets, reſembling ſmall Worms variouſly contorted, or in ſemi-tranſparent white Grumes, though ſometimes yellowiſh, reddiſh, or inclining to black. It is dry, yet ſomewhat adheſive to the Touch, and without Taſte or Smell. It is brought from *Candy*, *Greece*, and *Aſia*. It ought to be choſen in vermicular Pieces, white, like Iſing-Glaſs, and free from any Mixture of Filth. When it has a Caſt of red or black in its Colour, it is not fit for Uſe, except in ſome Trades.

It flows either ſpontaneouſly or by Inciſion from the Trunk and Branches of a low thorny Shrub, which is called *Tragacantha Cretica incana*, *flore parvo*, *lineis purpureis ſtriato*, Cor. I. R. H. 29. It grows in *Candy*, and many Parts of *Aſia*. *Tournefort* found it growing very common about *Mount Ida*, where in the Month of *July*, not only the Veſſels of the Bark, but the Pores of the Wood alſo, when the Branches are cut off, appear quite turgid with gummous Juice. When the woody Fibres are dried and contracted by the intenſe Heat of the Sun, they preſs with ſo much Force upon the Juice, that it burſts the Veſſels which contain it, and iſſuing forth concretes into long vermicular Pieces, larger or ſmaller, in Proportion to its Quantity and the Bigneſs of the Wound. If the Bark of the Branches, which are often ſpread abroad upon the Ground, be trod upon and bruiſed, or torn by Beaſts which feed on the Shrub, the Juice always flows more abundantly from thoſe Parts.

In

In a chymical *Analyſis*, two Pounds of Gum Tragacanth yielded three Ounces and ſeven Drachms of clear Phlegm, without either Smell or Taſte; ten Ounces and forty eight Grains of reddiſh Phlegm, of an empyreumatick Scent, and a ſubacid Taſte, and bitteriſh, ſomething like Peach-Kernels, which gave Marks of a ſtrong Acid; one Ounce, two Drachms and forty Grains of acid, and alkaline urinous Liquor, gently tinged with red; one Ounce, two Drachms and fifty ſix Grains of reddiſh Oil, reckoning both the thicker and the thinner. The *Reſiduum*, which was black and denſe like a Coal, weighed eight Ounces. This being calcined for twenty eight Hours left one Ounce of gray Aſhes; from which were got two Drachms and thirty Grains of fixt alkaline Salt. The Loſs of Parts in Diſtillation was ſeven Ounces, two Drachms and three Grains; in Calcination ſeven Ounces.

Gum Tragacanth therefore has the ſame Principles, and nearly in the ſame Quantity with Gum Arabick; yet contains ſomething more acid Salt and Earth, but leſs Oil. It is not ſoluble in Oils, or Spirit of Wine. It ſwells greatly in Water, and becomes a thick Mucilage, which a large Addition of Water can ſcarce diſſolve. This Property renders it uſeful to Apothecaries in making Powders with Sugar into Pills and Troches; becauſe by a very little of the Mucilage a great deal of Powder may be reduced into a Maſs.

This Gum inſpiſſates the Humours, abates their Motion, and ſoftens their Acrimony. It covers, with its ſoft *Mucus*, Parts which are excoriated and ſore, and ſo aſſwages their Pain. Whence in a Cough, Hoarſeneſs, and other Affections of the Breaſt proceeding from ſharp Lymph, it is frequently preſcribed; as alſo in Diſorders of the Urine occaſioned by Acrimony, as in a Dyſury, Strangury, and

and Ulceration of the Kidneys. Its Powder is either mixed with other incraſſating and ſoftening Medicines, or is made into a Mucilage with Roſe-Water, *&c.* The Doſe is from ℈ſs. to ʒij.

It is ſeldom uſed externally. Some recommend it for Chaps in the Hands, Feet, and Nipples; but it generally does more Hurt than Good: For being applied to the Skin, and growing dry by the Heat of the Part, it draws aſunder the Lips of the Chap, and enlarges it.

Take Liquorice Juice and *Japan* Earth ā ʒj. Sugar-Candy ʒiij. Opium gr. ij. Mucilage of Gum Tragacanth q. ſ. Make Troches, to ſtop catarrhous Defluxions, and Coughing.

Take of Gum Tragacanth bruiſed q. v. macerate it in q. ſ. of Scabious-Water, till the Water acquires the Conſiſtence of a Syrup. Then,

Take of this Mucilage ℥iij. the Water of Orange-Flowers ʒj. Oil of Sweet Almonds ℥j. Syrup of Marſh-Mallows ℥ij. Mix and make a Linctus.

Take of the Mucilage of Gum Tragacanth ℥ij. Oil of Linſeed ℥j. Syrup of Jujebs and white Poppies ā ℥j. Make a Linctus.

ARTIC. III. *Of* MANNA.

Manna is a Word of great Antiquity, having been received into moſt Languages ſince the Time of the *Hebrews*, but not always implying the ſame Thing. Among the Writers of the earlier Ages this Name was ſometimes given to a Sort of concreted ſweet Juice, which they imagined to fall from the Heavens like a Honey-Dew upon the Leaves of certain Trees. This Juice was probably

known, under the ſame Name, to the *Iſraëlites*; who perhaps aſſigned it afterwards to that Celeſtial Food which *God* ſent down for their Support in the Deſert, only becauſe it had ſome Reſemblance of the Manna they were before acquainted with *.

The ancient *Greeks* by the Word Μάννα underſtood the ſmall Pieces of Frankincenſe, as we have obſerved *Chap.* VII. *Artic.* VI. and the ſweet Juice which was imagined to fall down in the Form of Dew they called Δροσόμελι, Ἀερόμελι, Ελαιόμελι, (viz.) *Honey-Dew*, *aërial Honey*, and *Honey-Oil*. Under theſe, or other Terms of the like Purport, it frequently occurs in their Writings. *Ariſtotle* ſeems

* That the Manna, wherewith the *Iſraëlites* were miraculouſly ſupported in the Deſert, was a Subſtance of a peculiar Nature, and different from all other Sorts of Manna, may reaſonably be concluded from its having different Qualities, which rendered it proper for Food; but that the *Iſraëlites* were acquainted with any Sort of Manna before they came into the Deſert does not ſo evidently appear. *M. Geoffrey* ſuppoſes that the Word *Man* has the ſame Signification in the *Hebrew* with *Manna*, and therefore that the Words *Man-hu*, *Exod.* c. xvi. v. 15. the Expreſſion of the *Iſraëlites* upon finding it, ought to be tranſlated *it is Man* or Manna; whence it would ſeem that ſome ſuch Thing was known to them before. For this Interpretation he brings the Authority of *Salmaſius:* I ſhall however take the Liberty to ſubjoin, in Defence of the common Tranſlation, Part of a Note which I find in an old Edition of the Bible *(viz.)* "When the People of *Iſrael* in "the Deſert had ſpent their Prouiſion of Meate brought from "*Ægypt*, and according to God's Promiſe had receiued Store "of Quailes; going forth in the Morning they ſawe a ſtrange "Thing lye upon the Ground like to hoare Froſt, whereat "maruelling they ſaid one to an other: *What is this!* in their "Language *Man hu! Whereupon*, ſaith *Theodoret* (q. 30. in "*Exod.*) *their Demand was turned into the Name, and it was* "*called Manna.*" This indeed ſeems the moſt probable Interpretation, becauſe the Words immediately following inform us, that *they knew not what it was.* But we muſt leave the Deciſion of this Point to thoſe who are verſed in the *Hebrew* Tongue.

to ſpeak of it more than once; but his Scholar *Theophraſtus* was much better acquainted with it. In his Hiſtory of Plants, *l.* 3. *c.* 9. he ſays that Honey is produced from the Air, and is found upon no Leaves more common than thoſe of the Oak-tree: And beſides in a Fragment of his Book upon Bees, preſerved by *Photius* in his *Bibliotheca*, he diſtinguiſhes three Kinds of Honey, *(viz.)* One which the Bees make from Flowers; another which proceeds from the Air, when the humid Exhalations of the Earth fall down again after they have been concocted by the Sun, which uſually happens in the Time of Harveſt; and herein it agrees with our Manna: A third Kind which is found in Reeds, which is the ſame with our Sugar. *Dioſcorides* tells us, that *Elæomeli* or *Honey-Oil* flows from a certain Tree in *Syria*; that it is an Oil thicker than Honey, and of a ſweet Taſte. He ſays, that being given to the Quantity of about three Ounces in a Pint of Water, it purges Bile and Crudities. This ſeems to agree pretty well with what we call *Manna pinguis* or *fat Manna*. *Galen* upon Aliments, *l.* 3. *c.* 39. diſtinguiſhes the Honey of Plants from that of Animals, and ſpeaks of it thus. "It "is produced upon the Leaves of Plants; yet is "neither their Juice, nor their Fruit, nor any Part "of them, but is of the ſame Nature with Dew, "though it does not fall down ſo conſtantly as that, "nor in ſo great Abundance. I remember that one "Day in the Summer-Seaſon, when a great deal "of Honey had been found upon the Leaves of "Trees and Shrubs, the Peaſants were ſporting "for Joy, and ſinging *Jupiter melle pluit*, *Jupiter* "*makes it rain Honey*. Now the preceding Night "having been cold for that Time of the Year "(which as we have ſaid was Summer) and the Day "before hot and dry, the moſt ſkilful Interpreters

" of Nature ſuppoſe, that the Exhalations from " the Earth and Water, after being perfectly attenu- " ated and digeſted by the Heat of the Sun, had " been re-united and condenſed by the Coldneſs " of the Night following. But this ſeldom hap- " pens with us, though often every Year upon " Mount *Libanus*; where they ſpread Skins upon " the Ground, and then ſhaking the Trees, gather " what falls from them, and fill Jars and earthen " Veſſels with Honey; which they called *roſcidum* " and *aerium Mel*, *roral* and *aërial Honey*." *Hippocrates* likewiſe in his Book concerning Ulcers ſeems to have mentioned this melleous Juice of Mount *Libanus*. " To cure Ulcers (ſays he) another Me- " dicament is mixed with the Wine, namely, a " little cedrine Honey, *(mel cedrinum.)*" So he terms it, becauſe it was gathered upon the Cedars of this Mountain, in the ſame Manner as the Manna of *Brianzon* is now gathered upon Larch-Trees in *Dauphiny*. *Amynthas*, l. 1. *de Aſiæ Manſionibus*, according to *Athenæus*, gives the following Account of aërial Honey. " They pull it from Trees with the " Leaves upon which it is found, and then put it " together in the Form of a *Syrian* Maſs. Some " make it into Balls, from which, when they have " a Mind to take it, they break ſmall Pieces. Theſe " being diſſolved in Water, they afterwards ſtrain " the Liquor, and drink it out of wooden Cups " which they call *Tabætæ*; and its Taſte is like that " of diluted Honey, or even much more agree- " able." Theſe Words are applicable enough to ſome of our officinal Manna. *Pliny* ſpeaks of this melleous Juice, agreeably indeed, but with very little Regard to Truth. " Upon the firſt Approach " of Morning (ſays he) the Leaves of Trees are " found covered with Honey like Dew; and if any " Perſon have been walking abroad early, he may " perceive

" perceive his Garments bedewed, and his Hairs " matted together, by this Liquor, *&c.*" Neither have the *Latin* Poets been ſilent with Reſpect to this Juice. Thus *Virgil*, *Ecl.* 4.

Et duræ quercus ſudabunt roſcida Mella.

And *Ovid*, *Metamorph.* 1.

Flavaque de viridi ſtillabant Ilice mella.

The *Arabians* under aërial Honey comprehend *Tereniabin*, *Manna*, and *Sacchar Alhuzar* or *Alaſſer*. Of theſe they enumerate many Sorts, but with ſo great Obſcurity that it is impoſſible to aſcertain their Diſtinctions. *Avicenna* defines Manna to be all the ſweet Dew in general which falls from the Heavens upon Stones or Trees, and which grows thick like Honey, or hardens like Gum; ſuch as *Tereniabin*, *Siracon*, and the *Honey* which he ſays is brought from *Coraſſeni* in the Form of a *Rob* (perhaps the fat and liquid Honey of Mount *Libanus* in the Conſiſtence of a thick Syrup.) In another Place he ſays, " *Tereniabin* or *Trungubin* " is a Dew which falls moſtly in *Coraſſeni*, in the " Countries beyond the River, and in our Country " for the moſt Part upon the *Alhagi*. *Sacchar Alaſ-* " *ſer* is Manna which falls upon the *Alhuſar* like " Grains of Salt."

According to *Serapio* *, *Tereniabin* is a Dew which falls from the Heavens reſembling a concreted granular Honey. " It is called (ſays he) *Honey of* " *Dew*. It falls moſtly upon Trees in an oriental " Country called *Coraſſeni*. The Leaves of the

* He is commonly called *Serapion*, but I have wrote his Name as above out of Deference to my Author, who ſeems to have had a good Acquaintance with the medical Writings of the *Arabians*.

" Trees are like to green Thorns, the Flowers red, " and they bear no Fruit." The Manna of which *Serapio* here ſpeaks, is perhaps not different from that which *Avicenna* has above told us is gathered from the *Alhagi*. I paſs over the other *Arabians*, from whoſe Writings few certain Inferences can be drawn concerning the Nature and different Sorts of *Manna*. It is however very evident that this Juice, called *Manna* and *aërial Honey*, was known to them, as well as to the *Latins* and the *Greeks*.

Two Queſtions here offer themſelves to our Conſideration (*viz.*) 1. Whether that Honey-Dew, ſuch as the Ancients imagined it, did ever really exiſt? 2. Whether our Manna falls down like Dew upon Trees and Plants, or be produced within them?

As to the firſt Queſtion, I muſt indeed ingenuouſly confeſs that this Dew is entirely unknown to me; and, in my Opinion, no ſuch is ever obſerved to deſcend either upon Flowers, Leaves, or Stones. The ſweet Juice which is found in many Flowers, derives its Origin from the interior Organs of the Plant. The Juice which is ſometimes perceived upon Leaves, whether liquid or concreted, hath either ouzed out of the Pores of the Leaves, or hath diſtilled from the Leaves of other Trees. In fine, if Stones ſometimes appear ſprinkled as it were with Drops of a ſweet Liquor, it hath not fallen upon them from the Heavens, but from the Leaves of ſome neighbouring Trees, or by ſome other Means hath been brought to them. *Bodæus a Stapel*, in his Notes upon *Theophraſtus*'s Hiſtory of Plants, gives us an Account of an excellent Manna, extremely white, and as ſweet as Sugar, which was found upon Willow-trees, upon Stones, and upon the Earth; where it had been depoſited by an innumerable Swarm of large Flies in ſo great Plenty, that from the Number of Drops falling from a Willow-

Willow-Tree, upon which there was a large Collection of it, one would have ſaid it was a Dew. This Liquor being depoſited Drop by Drop upon Leaves and Stones, in a ſhort Time concreted, and had the Whiteneſs, Sweetneſs, Conſiſtence, and Virtue of the beſt Manna; and many Perſons gathered it for Uſe: But that which fell upon the Earth or in dirty Places was loſt. Now it is probable that the Flies, having gathered this ſweet Juice either from the Willow-Trees or other Plants, had ſo ſatiated themſelves with it, that they were forced to diſcharge in different Places what they had got; and this we may the rather ſuppoſe, becauſe certain Parts of the Bodies of theſe Flies were obſerved to be more prominent than the reſt, and full of little Holes, from which a great deal of Moiſture iſſued, in very ſmall white Drops, after the Manner of Sweat.

With Reſpect to the latter Queſtion, the Learned have been divided in their Opinions. Almoſt all the Ancients, both *Greeks* and *Arabians*, believed that the Manna which was collected upon ſome Trees was formed of Vapours raiſed from the Earth by the Heat of the Sun, and condenſed near its Surface by the Cold of the Night, in the ſame Manner as Dew or hoary Froſt; or that it was an excellent Juice of the Earth, which being elevated by the Summer-Heat, and digeſted in the Air into a ſweet Liquor, was condenſed by the nocturnal Cold, and fell down like Dew upon the Leaves of Trees and Shrubs. *Angelus Palea* and *Bartholomæus*, two *Franciſcan* Friars, who publiſhed Commentaries upon *Meſue* in the year 1543. were the firſt who aſſerted in Writing, that Manna was the inſpiſſated Juice of the Aſh-Tree, as well of the *common*, as of the *wild* Tree, which is called *Ornus*. Afterwards *Donatus Antonius Altomarus*, a Phyſician and Philoſo-

pher of *Naples*, in great Fame about the Year 1558. confirmed this Opinion by the following Obſervations.

1. " It is therefore (ſays he) the proper Juice of " theſe Trees, which is gathered in the Dog-Days " every Year for many Days ſucceſſively. For " though the Trees have been covered with Linen " or Woollen Cloths for many Days and Nights, " ſo that no Dew could fall upon them, they were " nevertheleſs obſerved, during that Time, to pro- " duce Manna. Now, we may conclude, that this " could not have happened, unleſs it had flowed " ſpontaneouſly from the Trees.

2. " All People who gather Manna acknowledge, " that when they have taken it off the Trees, af- " terwards a freſh Quantity flows by little and little " from the ſame Places, and is inſpiſſated by the " Heat of the Sun.

3. " They moreover relate, that in the Trunks " of Aſh-Trees, upon the Bark, ſome Veſicles or " Protuberances are often found, containing a white, " ſweet, thick Juice, which becomes an excellent " Manna.

4. " Further, if when theſe Trees are cut the " ſame thick Juice be found in the Inciſions, who " can doubt that it is the Juice of the Trees which " is protruded through their Trunk and Branches.

5. " This is alſo confirmed by the Inhabitants of " the Country, who aſſert that they have ſeen " Graſhoppers, and other Animals, boring into the " Bark of theſe Trees to ſuck out the Juice; and " when they have been driven away, they affirm " more Manna to have ſtill iſſued from the Per- " forations.

6. " I have likewiſe known Men worthy of Cre- " dit, who have aſſured me they have often cut " down Aſh-Trees to make Hoops for Caſks, and " that when they were cloven, and expoſed to the " Sun,

" Sun, they found a conſiderable Quantity of Manna
" in the Wood.

7. " People who are employed in making Coals,
" frequently perceive, when they are burning their
" Wood, that the Heat of the Fire occaſions Manna
" to exude from the neighbouring Aſh-Trees."

The ſame Author obſerves, that notwithſtanding Manna is copiouſly produced on all Parts of the Aſh-Tree uſually called *Fraxinus*, yet on the *Ornus* or wild Aſh it is very rarely found any where but upon the Trunk and the thicker Branches. Perhaps the Reaſon of this may be, that the wild Aſh, growing in rocky, mountainous Places, and barren Soils, is of a drier Nature; wherefore, not containing ſo large a Stock of Moiſture, nor ſo much diluted, a ſuperfluous Quantity thereof is ſeldom propelled to the Leaves or ſmaller Twigs. Beſides, as this Tree is very rough and knotty, its Juice is eaſily abſorbed between the Bark of the Trunk, and larger Ramifications, before it can arrive at their Extremities.

He likewiſe adds that Manna is collected from the ſame Trees every Year, which yield it for thirty or forty Years ſucceſſively; inſomuch that many Perſons are always found ready to purchaſe ſuch Trees, on Account of their annual Produce of this Commodity. Moreover, there are ſome Trees in the ſame Place, and of the ſame *Species*, whereupon no Manna is to be found.

Laſtly, Theſe Obſervations of *Altomarus* have been confirmed by *Goropius* in his *Niloſcopium*, by *Lobelius* and *Pena*, by *Coſtæus*, *Cornelius Conſentinus*, *Paul Boccone*, &c. who have relied more upon what they have ſeen themſelves, than upon the Authority of others.

Therefore, we ſhall define Manna to be a Sort of Gum exuding from different Kinds of Trees,

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at firſt liquid, but afterwards thickening into Grumes under the Form of an eſſential, oily, concreted Salt. It is found not only upon Aſh-Trees, but ſometimes alſo upon the Larch-Tree, the Pine, Fir, Oak, Juniper, Maple, Olive, Fig-Tree, and others.

It differs according to its Conſiſtence, its Form, the Trees from which it exudes, and the Places wherein it is gathered. One Sort is liquid, of the Conſiſtence of Honey: Another in ſolid Drops, which is called *Maſtichina*. It ſometimes forms itſelf into ſmall Lumps, and is called *Manne en Marons*; or ſometimes runs into long Tears like Icicles, and then is termed *vermicularis* or *bombycina*. From the Trees out of which it flows, it takes the Names of *Cedrina*, *Fraxinea*, *Laricea*, *Albagina*, &c. With Reſpect to Place, it is divided into the *Oriental*, and *European*.

Oriental Manna, which is found in the *Indies*, in *Perſia*, and *Arabia*, is twofold; the *liquid* which is like Honey, and the *concreted*. Many Authors make Mention of the liquid Sort. *Conſentinus* and *Bellonius* tell us that it is called in *Arabia* by the old Name *Tereniabin*. They ſuppoſe it to be the *cedrine Honey*, Κέδρινον μέλι, of *Hippocrates*, and the *Dew of Mount Libanus* of which *Galen* ſpeaks.

Bellonius, in his Obſervations, ſays that the Monks inhabiting Mount *Sina* gather a liquid Manna upon their Mountains, which they call *Tereniabin*, to diſtinguiſh it from the hard or ſolid Manna. *Garcias* and *Cæſalpinus* alſo relate that the ſame is met with in the *Indies*, and likewiſe in *Italy* upon the *Apennine* Hills, and that it reſembles a white purified Honey, but is ſoon corrupted. This *liquid* Manna differs only in Conſiſtence from the *ſolid*, into which it will concrete, if not prevented by the Humidity of the Air. *Avicenna*, *Garcias ab Horto*, and

and *Acoſta*, enumerate more Sorts of ſolid Manna, but not with ſufficient Accuracy. We may however diſtinguiſh three principal Sorts, *(viz.)* 1. The *Maſtichina*, ſo called, becauſe it is in ſmall indurated Grains, like Grains of Maſtich. 2. The *Bombycina*, which is in long cylindrical Tears like Silk-Worms. 3. That which is compacted into ſmall Maſſes like the Manna of *Athenæus* above-mentioned, or like the aërial Honey of the Ancients which was brought to them in Glebes: Such is likewiſe the Manna which now comes to us, commonly called *Manne en Marons*.

European Manna is of different Sorts; as the *Italian* or *Calabrian*, the *Sicilian*, and that of *France* or *Brianzon*; but theſe are not liquid.

It is alſo diſtinguiſhed into many Sorts from the Trees upon which it is gathered; but that which is got from Aſh-Trees in *Calabria* is what we chiefly uſe in Phyſick.

Manna Calabra, *Off. Calabrian* Manna of the Shops is a melleous concreted Juice, ſometimes in friable Grains, and ſometimes in long Tears or Grumes; when freſh, of a white Colour, ſomewhat tranſparent, but growing reddiſh with Age, and, when expoſed to a moiſt Air, melting into the Conſiſtence of Honey. It has an agreeable Taſte of Sugar with ſome Acrimony. The beſt is white, or yellowiſh, in ſmall Grains, or long hollow Grumes, of a ſweet, and not unpleaſant, Taſte, and free from Impurities. When it is fat, like Honey, blackiſh, and full of Dirt, it is rejected. The fat Manna, commonly called *Manne graſſe*, is injudiciouſly preferred by ſome; it being oftentimes nothing but Manna ſpoiled in the Carriage, either by the Moiſture of the Air, or by the Caſks, wherein it is contained, letting in Water from the Sea, or the Rain, *&c.* This fat Manna likewiſe is often compoſed of coarſe

coarſe Sugar mixed with Honey and a little Scammony; whence it ſometimes purges more violently than the others. Moreover, under the Name of Manna we frequently meet with denſe, white and opake Maſſes, which are made of Sugar and Manna boiled together to the Conſiſtence of a ſolid Electuary: But this factitious Sort is eaſily diſtinguiſhed from the genuine, by its Weight, Opacity, and different Taſte.

Manna is got from two Sorts of Aſh-Trees. The one is called *Fraxinus humilior, ſive altera Theophraſti, minore et tenuiore folio*, C. B. P. 416. *Ornus, Ludg.* 83. The other is called *Fraxinus rotundiore folio*, C. B. P. 416. *Ornus, Quorumd.* They differ ſomething from our common Aſh, named *Fraxinus excelſior*, C. B. but not ſo much as to be properly accounted diſtinct *Species*. The Manna flows from them in *Calabria*, and *Sicily*, either ſpontaneouſly or from Inciſions.

In *Calabria*, from about the twentieth Day of *June* to the End of *July*, provided the Weather be fair, it iſſues ſpontaneouſly from the Trunk and large Branches of theſe Trees, continuing to flow from Noon till Evening under the Form of a clear Liquor, which gradually thickens into hard white Grumes. If the following Night be ſerene, they ſcrape the Manna off in the Morning with wooden Knives; but if the Weather during the Night have been wet or foggy, it melts and is entirely loſt. When they have gathered it, they put it into unglazed earthen Veſſels. Afterwards they expoſe it to the Sun in white Papers ſpread upon Boards, till it becomes ſo dry as not to adhere to the Fingers. This is called *Manna ſpontanea*, *ſpontaneous Manna*, and *Manna di corpo*, *Manna of the Trunk*.

About the End of *July*, when the Juice ceaſes to flow, the Country-People make Inciſions into the Trees,

Trees, of both Sorts, quite through their Bark, and then the Juice iſſues forth again, and runs into larger Grumes. The Quantity is often ſo great that it flows down to the Bottom of the Tree, and there forming itſelf into large Maſſes, is left a Day or two to thicken. Afterwards it is divided into Pieces and dried in the Sun. This is termed *Manna coacta*, and by the Inhabitants *Forzata* and *Forzatella*, becauſe it is only obtained by making a Wound in the Bark. Its Colour is not very white, but rather reddiſh, and often inclining to Black, by Reaſon of the Dirt and Impurities which are mixed with it.

A third Sort, which is gathered upon the Leaves of ſome Aſh-Trees, is called *Manna di frondo*. In *July* and *Auguſt*, about the Middle of the Day, it exudes ſpontaneouſly from the Leaves, like ſmall, tranſparent, liquid Drops. Theſe becoming dry with the Sun, concrete into white Grains, of the Bigneſs of Millet or Wheat; ſo that the Leaves ſometimes appear in *Auguſt* as if they were covered with Snow. Notwithſtanding this Manna was very much uſed formerly, it is now rarely met with in the Shops in *Italy*, by Reaſon of the Difficulty which attends the gathering it.

The Inhabitants of *Calabria* diſtinguiſh the Manna obtained by Inciſion from Trees which have yielded ſome of their own Accord before, from that which is drawn from ſuch wild Aſh-Trees as yield none of their own Accord. The latter is accounted more valuable, as the ſpontaneous Manna of the Trunk is preferred to the others. Sometimes alſo, when they have cut the Bark, they inſert Straws and ſlender Twigs in the Wounds. The Juice, as it runs along theſe, is inſpiſſated, forming long ſtalactical Grumes, like Icicles. When they have acquired a proper Size, the Straws and Twigs being drawn out, they are laid in the Sun to dry, and afterwards

terwards appear in long, hollow, light Pieces, of a beautiful white Colour, ſometimes mixed with a Caſt of Red. They are then very carefully put up into wooden Caſks, being highly valued; and indeed deſervedly, ſince they are entirely free from Impurities. Next after this Sort, which we commonly term *Manne en larmes*, in our Shops we prefer the *Calabrian* Manna, and that which is gathered in *Apulia* about the Mountain *Garganus*; this however is ſomething yellow, and not very dry. After theſe we rank the *Sicilian*, which is whiter and drier. Laſtly, the Sort which is gathered near *Civita Vecchia* in the Territory of *Rome*, called *La Tolfa*, which is dry, more opake, and heavy, is ſold cheaper than the others, and is leaſt eſteemed.

In a chymical *Analyſis*, two Pounds of choice Manna diſtilled in B. V. yielded two Ounces, ſix Drachms, and forty eight Grains of limpid Phlegm void of Taſte and Smell, which yet inclined the Tincture of Turnſole to a red Colour. Then the *Reſiduum*, being dried, reduced to Powder, and diſtilled from a Retort, afforded one Ounce and one Drachm of clear Liquor manifeſtly acid; nine Ounces of reddiſh empyreumatick Liquor, both acid and a little urinous; two Ounces of thin reddiſh Oil; and two Ounces, four Drachms, of thick reſinous Oil, concreted into Grumes. The black Maſs in the Retort, weighing ſix Ounces, five Drachms, and twelve Grains, was hard, denſe, and void of Taſte. This being calcined for eight Hours in a reverberatory Fire, till it gave over ſmoking, left ſix Drachms and ſix Grains of brown Aſhes; from which were extracted two Drachms of fixt alkaline Salt. The Loſs of Parts in Diſtillation was ſeven Ounces, two Drachms and twelve Grains; in Calcination five Ounces, ſeven Drachms and ſix Grains. Manna therefore is compoſed of a copious eſſential

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or tartarous Salt, and a ſmall Portion of ammoniacal Salt, involved in a large Quantity of both thick and thin ſulphur.

The ſolutive Virtue of Manna was not known to *Galen*, though *Dioſcorides* ſeems not to have been ignorant of it, for he aſſerts that *Elaiomeli* draws off Bile and crude Humours. But *Actuarius* is the firſt among the *Greeks* who expreſsly mentions it as a Purge. "Black Caſſia (ſays he) and Manna purge "very gently. Caſſia being taken to three or four "Drachms ſcarce moves the Belly. Manna muſt "ſtill be taken in a larger Quantity, and it eva-"cuates yellow Bile." The *Arabians* aſcribe to it a Virtue of purging gently, of lubricating the Throat and Breaſt, and deterging the Stomach. Among modern Phyſicians its Uſe is very common to relax the Belly, to draw off ſerous Humours, and to diſcharge thick viſcid Matter from the firſt Paſſages. It is reckoned ſo mild a Cathartick, that it may be given ſafely to old People, and Children; likewiſe to pregnant Women, and thoſe of the more delicate Conſtitutions.

It agrees particularly, ſays *Rolfincius*, in cold Diſeaſes, in the cooler Temperaments, and in temperate Climates; it ſoftens the Acrimony of the Humours, and diſſolves their Lentor. Wherefore, in Catarrhs and Coughs from thin acrid Phlegm, in the Beginning, it is given with Succeſs; for it immediately precipitates the Phlegm through the Inteſtines. It is uſeful in Diſtempers of the Breaſt, eſpecially when the Lungs are ſtuffed with a tenacious viſcid Phlegm, as in a humoural Aſthma. In bilious Affections, and in others which are attended with Inflammation, as in the Pleuriſy, Peripneumony, and a Tenſion of the Belly from thick fermenting Bile, it is very ſerviceable, by diſſolving the Humours and carrying them off by Stool; whatever ſome may aſſert to the contrary.

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In hot Temperaments it is hurtful, ſays *Rolfincius*, and in hot Diſeaſes, unleſs it be mixed with Acids, as Tamarinds, *&c.* for otherwiſe it is converted into Bile, and ſupplies as it were Fuel to the hot and dry Cacochymy. *Rondeletius* and *Duretus* ſuppoſe it to be dangerous for Perſons abounding with Bile. Indeed, a Medicine of this Kind ought not to be given to ſuch, unleſs there be a Neceſſity of purging; but then no Purge can be more ſafe than this, if it be properly qualified with Acids, (*viz.*) with Tamarinds, Cream of Tartar, and Lemon-Juice, or with purified Nitre, *&c.*

Meſue ſays it operates ſlowly, and therefore directs it to be mixed with other Purgatives; which the modern Phyſicians have obſerved, who preſcribe it with Caſſia, Sena, Rhubarb, *&c.* It has alſo this Inconvenience, that it eaſily ferments, or, as *Hoffman* ſpeaks, contains ſomething flatulent: Wherefore he adviſes to give it in Decoction. The Boiling however, as *Rolfincius* cautions, ought to be gentle, leſt by an Evaporation of the lighter Parts its Efficacy be deſtroyed. Some likewiſe object that it diſſolves the Humours, and only evacuates Serum, and that it occaſions Drineſs and Thirſt; for which Reaſons many Practitioners have entertained no very favourable Opinion of it.

But if we examine cathartick Medicines over ſcrupulouſly, we ſhall find no one without its Inconveniences, ſince they all ſeem, as *Galen* teſtifies, to be ſomewhat contrary to Nature; and this is more particularly to be underſtood of Hydragogues, which exert their Action not only by vellicating the Membranes of the Inteſtines, but alſo eſpecially by fermenting and diſſolving the Blood and Lymph.

However, ſince Purgatives, and ſometimes even Hydragogues, are neceſſary, Manna ought to be preferred to others; becauſe it is an efficacious Me-

dicine, and among Hydragogues the leaſt prejudicial. Its Acrimony may be blunted by boiling it a little with Tamarinds or Caſſia. If it require a *Stimulus*, ſome Rhubarb or Sena may be mixed with it; or, to make it operate ſtill more powerfully, a few Grains of emetick Tartar, in the Proportion of one Grain to each Doſe. Thus a plentiful Evacuation of Bile and ſerous Humours may be promoted, without the leaſt Pain or Sickneſs. Therefore Manna, provided it be properly given, will prove a ſufficiently mild, and a uſeful Medicine.

Take of *Calabrian* Manna ℥ij. Cryſtal Mineral ʒj. Diſſolve them in an alterative Broth, which may be taken to relax the Belly.

Take of choice Manna ℥ij. Tamarinds ℥j. Boil them in ℥xij. of Whey. Divide the ſtrained Liquor into two Doſes, to be drank at the Diſtance of an Hour from each other.

Take of Manna ℥iſs. choice Rhubarb and Cream of Tartar, ā ʒj. Boil them gently in ℥vj. of a Decoction of the Roots of Dog's-Graſs and wild Succory. To the ſtrained Liquor add the Juice of an Orange or Citron.

Take of the Pulp of Caſſia with the Stones ℥j. Manna ℥iſs. *Sal Polychreſtum* ʒj. Boil them in ℥vij. of Succory Water. In the ſtrained Decoction diſſolve of the compound Syrup of Apples, or of Peach-Bloſſoms, ℥j. Make a Potion to be given in the Morning on an empty Stomach.

Take of the Pulp of Caſſia, freſh drawn, with the Stones ℥iij. *Calabrian* Manna ℥ij. Boil them in ℥xij. of a Decoction of Barley. In the ſtrained Liquor diſſolve gr. ij. of emetick Tartar, and divide into two Doſes, to be drank within about four Hours one after the other.

Take of the beſt Manna ℥ſs. or ʒvj. Cow's Milk ℥iij. Boil them gently, and let the Milk be ſtrained and given to Children.

Take of Manna ℥ij. common Salt ʒſs. Diſſolve them in ℥iv. of Spring Water. Pour this Solution upon bitter Almonds bruiſed N°. vi. and add ℥iv. of Cow's Milk. Let the Liquor be ſtrained by Expreſſion, and drank warm.

Take of pick'd Sena ʒiiſs. Cinnamon and Coriander Seed, ā ʒſs. Liquorice ſhaved and bruiſed ʒij. Cream of Tartar ʒj. Let theſe be infuſed for ſix Hours in ℥viij. of clear Water, in which diſſolve ℥iiſs. of Manna. Clarify the ſtrained Liquor with the White of an Egg, and ℥ſs. of ſtrong Vinegar, to make a Potion.

Take *Calabrian* Manna and the univerſal Confection, ā ℥j. Boil them in ℥vj. of Plantain-Water, and give the ſtrained Decoction in a Diarrhœa or Dyſentery.

Take of Manna ℥iſs. of the univerſal Electuary with a double Quantity of Rhubarb ℥j. Let them boil a little in ℥vj. of a Decoction of the Roots of Dog's-Graſs, and add to the ſtrained Liquor ℥j. of the Oil of Sweet Almonds. Let this be drank in colick Pains, and Inflammation of the Bowels, when purging is required.

In ſome Compoſitions, as purgative Electuaries, *&c.* Manna may be employed inſtead of Conſerve. Thus,

Take of choice Manna ʒvj. *Cornachine*'s Powder ℈ij. Jalap ℈j. dulcified Mercury ſublimate gr. xx. Syrup of Buckthorn q. ſ. for an Electuary.

Take Manna and Saffron of Iron prepared with May-Dew, ā ℥ſs. Myrrh, Saffron and dulcified Sublimate, ā ʒij. waſhed Aloes, Cream of Tartar

Tartar and Gum Ammoniack, ā ʒiij. *Diagrydium* ʒiſs. Mix with q. ſ. of the Syrup of Succory with Rhubarb, and make a Maſs for Pills ſ. a. of which ʒſs. may be taken every Day, or ʒj. every third or fourth Day.

Beſides the Sorts of Manna above deſcribed, we have another called *Manna Brigantiaca*, or *Laricea*, becauſe it flows from Larch-Trees near *Brianzon* in *Dauphiny*. It is in ſmall white Lumps, ſometimes round and as big as Coriander-Seed, ſometimes oblong and larger, of an agreeable ſweet Taſte ſomewhat reſinous. This is ſeldom uſed at *Paris*, becauſe the *Italian* is preferable, being much more purgative.

It is the nutritious Juice of the *Larix folio deciduo conifera*, J. B. which we have before mentioned in treating of Turpentine. From about the twentieth Day of *June* till the End of *Auguſt*, it exudes at different Times from the Leaves, provided the Weather be fair; for in rainy Seaſons none appears. It adheres tenaciouſly to the Leaves, ſo as to be very difficultly ſeparated from them: The Country People therefore cut down the Trees in the Morning, and pile up the Branches together in Parcels in a ſhady Place. By this Means the Juice, which is now too ſoft to be gathered, in the Space of twenty four Hours is inſpiſſated and hardened. It is then gathered, and laid in the Sun till it becomes entirely dry; and afterwards is cleared as much as poſſible from the Leaves.

Some aſſert this Manna to be a Sort of Dew. But *Lobelius* and *Pena* relate that Manna has been found, in the Summer, upon Branches of the Larch-Tree which have been carried into a Cellar the Day before, when none was viſible upon them; from which Experiment it evidently appears to be the Juice of the Tree.

Another Sort of Manna is uſed in the Eaſtern Countries, which is an Exudation from a ſmall thorny Shrub, named *Alhagi Maurorum*, *Rauvolf. Hiſt. Ludg.* 94. *Geniſta-Spartium Spinoſum*, *foliis Polygoni*, C. B. P. 394. It grows plentifully in *Egypt*, *Armenia*, *Georgia*, *Perſia*, about Mount *Ararat*, and in ſome Iſlands of the *Archipelago*. It is often found twiſted about with Dodder. The whole Plant has an aſtringent Taſte; and ſometimes in *Egypt*, according to *Auguſtin Lippi*, it lets fall a red aſtringent Tear, like Dragon's Blood.

Rauvolfius and *Tournefort* tell us that upon its Leaves, Stalks and Branches, eſpecially in *Perſia*, the People collect Manna, which they term *Trunſchibin*, and the *Arabians Tereniabin* and *Trungibin*. In the hotter Months of the Summer it breaks forth in Drops, which harden into reddiſh Grains of the Bigneſs of Coriander-Seed. Theſe, when gathered, are compacted into a large Lump, with a Mixture of Leaves, Thorns, *&c.* If it were entirely pure, it would be no leſs efficacious than *Calabrian* Manna: But the Inhabitants give it to ℥iij. for a Doſe; becauſe it uſually conſiſts of a greater Proportion of Leaves than Juice.

The renowned *Tournefort* makes no Doubt but that this is the *Tereniabin* of *Serapio* and *Avicenna*, which, according to their Accounts, was a Manna of the ſame kind, deſcending from the Heavens, like Dew, upon certain thorny Shrubs.

Of GUM-RESINS.

ARTIC. I. *Of* GUM AMMONIACK.

Ammoniacum et Gummi Armoniacum, *Off.* Αμμωνιακὸν, *Dioſc.* Αμμωνιακὸν θυμίαμα, *Gal. Gutta Hammoniaca*, *Latin. Raxach et Aſſach*, *Arab.* Gum Ammoniack

moniack (as it is called) is a concreted Juice of a middle Nature between a Gum and a Reſin. It is ſometimes in large Glebes compoſed of ſmall Grumes, of a browniſh Colour, with white or reddiſh Spots interſperſed through its Subſtance, ſo as to reſemble the Mixture in the *Benzoïnum amygdaloïdes*. Sometimes it comes to us in denſe, ſolid Tears, not unlike Frankincenſe, of a yellowiſh or brown Colour on the Outſide, and white or inclining to yellow within, and ſhining. It has a ſweet Taſte when firſt taken into the Mouth, which afterwards becomes bitter, and a penetrating Smell, ſomething like Galbanum, but ſtronger. It ſoftens in the Hands, becomes ductile under the Teeth, and grows whiter upon chewing. Being thrown upon burning Coals it takes Flame; and is ſoluble in Vinegar, or hot Water. It is brought to us from *Alexandria* in *Egypt*.

For internal Uſe the Tears are preferred to the Glebes. The beſt are large, dry, and free from Impurities. The Glebes likewiſe, when clear and interſperſed with granular Spots, are approved. If they have any Mixture of Filth, they are purified by being diſſolved in Vinegar, and then ſtrained and inſpiſſated. But by this Preparation the Gum is greatly deprived of its volatile Parts.

The pure Ammoniack in Tears *Dioſcorides* calls θραῦσμα, and that which is impure from a Mixture of Sand and Gravel, he calls φύραμα. He tells us that it is the Juice of a Sort of *Ferula*, growing in that Part of *Libya* which lies near the Temple of *Hammon*. This Shrub, ſays he, is called ἀγασυλὶς. *Pliny* gives it the Name of *Metopion*.

It is indeed evident that Gum Ammoniack is a milky Juice, flowing either ſpontaneouſly or by Inciſion from a certain umbelliferous Plant not yet deſcribed. This we may conclude from the Seeds,

which are ſometimes mixed with the Glebes, being foliaceous, and like thoſe of Dill, but larger. And the Plant grows in that Part of *Africa* which borders upon *Egypt* to the Weſt, and is now called the Kingdom of *Barca* *, wherein there formerly ſtood a famous Temple dedicated to *Jupiter Ammon*; whence the Gum took the Name of *Ammoniacum*.

In a chymical *Analyſis*, two Pounds of choice Gum Ammoniack yielded ſix Ounces, one Drachm, and thirty four Grains, of tranſparent, reddiſh, odorous, and ſubacid Phlegm; one Ounce, ſix Drachms of urinous Phlegm; two Ounces, five Drachms, and forty eight Grains of tranſparent, yellowiſh, odorous Oil; and ſeven Ounces, two Drachms, of yellowiſh and brown Oil, of a thicker Conſiſtence. The black Maſs remaining in the Retort weighed eight Ounces and ſeven Drachms; which being calcined in a Crucible for twenty Hours, left one Ounce and twelve Grains of brown Aſhes: From which were extracted, by Lixiviation, one and ſixty Grains of fixt alkaline Salt. In this Diſtillation the Loſs of Parts was five Ounces and two Drachms; and in the Calcination ſeven Ounces, ſix Drachms, and ſixty Grains.

By this *Analyſis* Gum Ammoniack appears to be compounded of a large Quantity of Sulphur, both thick and thin, with ſome tartarous and ammoniacal Salt, and a ſmall Portion of Earth.

It ſoftens indurated Parts, incides and diſſolves thick and tenacious Humours, and diſcuſſes Congeſtions. It is ſerviceable to Aſthmaticks, diſſipates crude Tubercles of the Lungs, reſolves ſcirrhous Tumours of the Liver, Meſentery, Spleen, and Womb, promotes the menſtrual Evacuations when ſuppreſſed, opens Obſtructions, diſcuſſes

* In that Part of *Barca*, which in the old Geography was called *Marmorica*, and was a Province of the ancient *Libya*.

Tophes

Tophes in the Joints, and ſometimes gently relaxes the Belly. It is given internally from ℈ſs. to ʒj. in the Form of an Emulſion, Electuary, Bolus or Pills. Externally it is applied to ſcirrhous, ſcrophulous, and other hard, obſtinate Swellings.

Take of choice Gum Ammoniack ʒſs. diſſolve it in a Mortar with Hyſſop-Water ℥iv. white Wine ℥ij. Divide the ſtrained Liquor into two Draughts to be taken in an Aſthma.

Take Gum Ammoniack and Flowers of Benzoine, ā ʒſs *. Balſam of Sulphur with Oil of Aniſeed q. ſ. Mix and make a Bolus to diſſolve Infarctions of the Lungs.

Take of the pureſt Gum Ammoniack ʒiſs. Flowers of Benzoine ʒj. Powder of Wood-Lice ʒiij. Extract of Saffron and Balſam of *Peru*, ā ℈ſs. Balſam of Sulphur with Turpentine q. ſ. Mix and make Pills. Theſe are highly commended by *Morton* in the Beginning of a ſcrophulous Conſumption. The Doſe is gr. xij. three Times a Day.

Take Gum Ammoniack and waſhed Aloes, ā ʒj. Myrrh, Sena and Saffron powdered, ā ʒſs. Syrup of Wormwood q. ſ. Mix and make Pills. The Doſe is ℈j. every Day in the Morning on an empty Stomach, in Obſtructions of the Womb and Bowels.

Take Gum Ammoniack and powdered Wood-Lice, ā gr. xx. Æthiops Mineral ʒſs. Conſerve of Marygold Flowers q. ſ. Mix and make a Bolus, to be given every Day againſt ſcrophulous Affections, with the following Purge every fourth Day.

* Half a Drachm of the Flowers of Benzoine is too large a Doſe. My Author has before confined the Doſe between three Grains and twelve: I therefore ſuppoſe this muſt have been a Miſtake of the Preſs.

Take Gum Ammoniack and dulcified Mercury Sublimate, ā gr. xv. Troches *Alhandal* gr. x. Syrup of Peach-Bloſſoms q. ſ. for a Bolus.

Take Gum Ammoniack, Aloes, and the aperient Saffron of Iron, ā ʒj. Cinnamon and Nutmeg, ā ʒſs. Vitriolated Tartar ʒij. Conſerve of Wormwood q. ſ. Mix and make an Electuary. The Doſe is ʒij. twice a Day in a Suppreſſion of the *Menſes*, and Obſtructions of the Liver and Womb.

Take Gum Ammoniack and Cream of Tartar, ā ʒj. Sena powdered ʒvj. Diaphoretick Mineral ʒiij. Troches of Agarick ʒij. Troches *Alhandal* ℈ij. *Diagrydium* ℈j. the univerſal Electuary ʒij. Syrup of Peach-Bloſſoms q. ſ. to make an Electuary, of which ʒiij. may be taken every other Day to remove inveterate Obſtructions of the Meſentery.

Take Gum Ammoniack and the Plaiſter of Hemlock, ā p. æ. Mix and make a Plaiſter to be applied externally over a Scirrhus of the Liver, Spleen, or Meſentery.

Take of Gum Ammoniack q. v. Oil of Cloves and Oil of Sweet Almonds, ā q. ſ. Make them into a Liniment to reſolve ſcrophulous Tumours and Tophes in the Joints.

The yellow or reddiſh Oil, which is obtained by diſtilling Gum Ammoniack from a Retort, is commended in the Aſthma, and in difficult Reſpiration; and the dark coloured Oil, which comes over the laſt, is externally a good Reſolvent in the Caſes above-mentioned.

ARTIC. II. *Of* ASSA FOETIDA.

Aſſa Fœtida, *Off.* Σίλφιον, *Dioſc. et Theophraſt.* Οπος, *Hippoc.* Οπος Μηδικὸς, Παρθικὸς, Κυρηναικὸς, *Nonnullor.*

Nonnullor. Laſer et Laſerpitium, Plin. et Latinor. Althit, Avicen. Σκορδολάσαρον, *Quorumd. recentior. Gracor. Hing, Perſar. et Indor. Stercus Diaboli, Nonnullor.* It is a Gum-Reſin of a compact Subſtance, when freſh ſoft and ductile like Wax, in large Glebes compoſed of various ſhining Grumes, partly whitiſh or yellowiſh, and partly reddiſh, of a fleſhy Colour, or tending to that of a Violet; of a fœtid Smell, like Garlick, but ſtronger; and a bitter, acrid, biting Taſte. In the Shops we meet with two Sorts: One impure and foul; another pure, of a clear reddiſh Colour, and variegated with a great Number of elegant white Tears. It comes to us from *Perſia* and the *Eaſt Indies*. It ought to be choſen of a ſtrong fœtid Smell, not too fat, and full of Tears. When it is old, unctuous, black, opake, or mixed with Sand, Pieces of Bark, *&c.* it muſt be rejected.

This Juice was very famous amongſt the Ancients, not only for its Uſe in Medicine, but alſo in Sauces. They diſtinguiſhed two Sorts of it with Reſpect to the Places where it was produced: The one was called the *Cyrenaïck* Juice, being collected in *Cyrenaïca*, a Province of *Africa*; and this was the more valuable: The other was called the *Median* or *Perſian* Juice, becauſe it was brought to them from *Media* and *Perſia*; but this Sort was more common, and cheaper. The *Cyrenaïck*, according to *Dioſcorides*, had a ſtrong Smell of Myrrh; and the *Perſian* was more fœtid, ſomething like a Leek or Onion; whence it was named *Scordolaſarum*. Its Smell was not much unlike that of *Sagapenum*; for *Dioſcorides* ſays, that the Smell of *Sagapenum* is between the Smell of *Silphium* and *Galbanum*, and that *Silphium* is often adulterated with *Sagapenum*. Therefore, the principal Difference between the *Cyrenaïck* Juice and the *Perſian* conſiſted in the Smell, which was more agreeable in the former.

In the Time of *Pliny* the *Cyrenaïck* Juice was no longer to be procured. One Stalk only of the *Laſerpitium*, (*viz.* the Plant) which was then found in *Cyrenaïca*, was ſent to the Emperor *Nero*; and for a long Time no other Sort of *Laſer* was brought to *Rome*, but what was gathered in *Perſia*, *Media*, or *Armenia*, as at preſent it is produced in the ſame Countries.

Authors have diſputed much about the *Aſſa Fœtida* of the Shops (*viz.*) whether this was the *Silphium*, *Laſer*, and *Succus Cyrenaïcus* of the Ancients, or no? The Reaſons why they were ſo long undetermined on this Head were theſe.

1. Becauſe *Laſer* was ſo highly eſteemed among the Ancients, that the *Cyrenéans* offered a Plant of *Silphium* to *Battus* the Founder of their City *Cyrene*, as a Mark of their Reſpect and Acknowledgment; and a Medal was ſtruck, which on one Side repreſented *Battus*, and on the other the *Cyreneans* offering to him the Kingdom and *Silphium*: Whence theſe Expreſſions, *the Silphium of Battus*, and *He is worthy of Silphium*, became proverbial. They likewiſe offered yearly to *Apollo* of *Delphos* a Stalk of *Silphium*, which they made Choice of as thinking it more precious than the other Productions of the Earth.

2. Becauſe both the *Cyrenaïck* and the *Perſian Laſer* were reckoned among the moſt agreeable Seaſonings for Food, and among the beſt of Medicines, as we are informed by *Pliny*, *Lib.* 19. *cap.* 15. 570. *T.* 3. "Next after theſe, ſays he, (ſpeaking of "Muſhrooms, *&c.*) we muſt rank the famous "*Laſerpitium*, which the *Greeks* call *Silphion*. It "was formerly found in the *Cyrenaïck* Province. "Its Juice, termed *Laſer*, is ſo highly eſteemed "for its medicinal and other Uſes, that it is equal "in Value to its Weight in Silver. It is now many "Years

" Years since any was found in that Country, &c. " and for a long Time no other *Laser* has been " brought to us, than that which grows abundantly " in *Persia* or *Media*, and *Armenia*; but it is much " inferior to the *Cyrenaïck*, &c."

3. Because many Authors have told us that the best *Silphium*, namely the *Cyrenaïck*, had a pleasant Smell and Taste: Wherein it seems to have been vastly different from our *Assa Fœtida*, which has a Smell so detestable to the Inhabitants of *Europe*, that they give it the Name of *Stercus Diaboli*, *the Devil's Dung*.

But we must observe, that if *Silphium* was so much esteemed by the *Cyreneans*, *Greeks* and *Latins*, it is now no less by the *Persians*, and almost all the People of *Asia*: For by these it is called *Cibus Deorum*, *the Food of the Gods*; and to procure it they undergo the greatest Fatigue, in wandering for many Days together over the Tops of wild Mountains, exposed to the most scorching Rays of the Sun.

Nor was *Silphium* more grateful to the Palate than *Assa Fœtida*; since the Scent which it dispersed was so fœtid and strong, that by some it was called Κάκοσμον φυτάριον, *the stinking Plant*. The *Indians*, on the other Hand, who eat *Assa Fœtida* familiarly in their Food, think that it has a sweet Swell, and a most exquisite Taste.

Moreover, we are not to decide upon this Point according to our Taste; for it is evident that many Things were agreeable to former Ages, both in Taste and Smell, which are now thought unpleasant and fœtid. On the contrary, we know that the Smell of the Citron was detestable to most of the Ancients. This strange Diversity of Tastes is likewise observable at present. Many, for Instance, have an extreme Aversion to Garlick, insomuch that the

the Breath of Perſons who have eat it is inſupportable to them; and its Taſte conſequently in the higheſt Degree nauſeous. Others, notwithſtanding, think it has an excellent Savour, and are always cramming it into their Victuals as a Seaſoning: So certain it is that there is no diſputing about Taſtes. The preſent Age hath likewiſe ſeen the ſame Inconſtancy with Regard to Smells. The Compoſitions ſcented with Muſk, which were ſo agreeable fifty Years ago, are now ſo much neglected, that Perhaps Poſterity will be at a Loſs concerning the Nature of that Perfume; ſince they will probably find it difficult to reconcile its offenſive Smell with the Sweetneſs formerly aſcribed to it.

We are not to judge otherwiſe of the excellent *Cyrenaïck Silphium*; to which ſome, without Doubt, have comparatively attributed a pleaſant Taſte and Smell. *Dioſcorides* ſays the *Cyrenaïck* Juice is leſs fœtid than the *Perſian*; but he does not abſolutely deny that it is fœtid. He tells us that it only differs from the *Perſian* Juice in the Gentleneſs of its Smell, not infecting the Breath ſo much, nor continuing ſo long in the Mouth.

Foraſmuch therefore as it is now almoſt univerſally agreed, that *Perſia* is the native Soil of *Laſer*, and of *Aſſa Fœtida*; that the Uſe of this at preſent among the *Indians* is the ſame with the Uſe of *Laſer* among the Ancients; that their Eſteem for it is the ſame; that *Aſſa* is at this Time prepared in *Perſia* entirely in the ſame Manner, as the Juice of *Silphium* was formerly; and laſtly, that the Juice of the *Cyrenaïck Silphium* only differs from the *Perſian* in Mildneſs of Smell: We may certainly conclude that the *Silphium*, *Laſer*, and *Succus Cyrenaïcus* of the Ancients, and the *Aſſa Fœtida* of our Shops, are not Juices of diſtinct Kinds, but the ſame, differing very little from each other.

The

The Plant, which by the *Greeks* was called *Silphium*, and by the *Latins Laſerpitium*, according to *Theophraſtus* and *Dioſcorides*, had a very thick Root; a Stalk, named *Maſpetum*, like the *Ferula*; a Leaf like Smallage, with a broad and foliaceous Seed: The Juice by ſome of the *Greeks*, by Way of Eminence, was termed ὄπος, *the Juice*, and ὄπος Σιλφίε, *the Juice of Silphium*, and the *Latins* gave it the Name of *Laſer*.

All the Parts of this Plant had a Share in medicinal and culinary Uſes. The Juice was not only diſtinguiſhed on Account of the Countries from which it was brought, but alſo with Reſpect to the Part of the Plant from which it was drawn: Thus, that which was got from the Stalk was called καυλίας, and that from the Root ριζίας, which was reckoned inferior. There are, ſays *Theophraſtus*, certain Meaſures as it were of cutting the Root, by which as much is reſerved at firſt as they think ſufficient, and afterwards they cut the reſt. This Method of cutting the Root, according to certain Meaſures or Quantities, is to this Day obſerved in *Perſia*.

The Authors who for many Ages after the Ancients wrote upon this Plant, have ſo far failed to throw any Light upon its Hiſtory, that they have rendered it more obſcure. We had no certain Knowledge of it, till *Kæmpfer*, returning from his Travels into the Eaſtern Countries, obliged the World with a very exact Account both of the Plant and the Method of obtaining its Juice.

In *Perſia* the Plant is commonly called *Hingiſeh*, and the Juice *Hiing*. *Kæmpfer* ſays it is an umbelliferous Plant a-kin to Lovage. It has a large Root of a black Colour on the Outſide and white within, continuing many Years in the Earth, and always encreaſing in its Bulk; from which ariſes a Stalk about as thick as one's Finger, and full of white Pith,

Pith, putting forth large winged Leaves, in Shape like Piony, but in Subſtance and other Reſpects liker Lovage. The Flowers conſiſt of five pale Leaves, and the Seed is foliaceous, reſembling that of the Parſnep, or Brank-Urſine. This Plant grows in *Perſia*, and from thence is brought all the *Aſſa Fœtida* which comes into *Europe*. It is collected upon the Mountains about *Heraat* in the Province of *Choraſan*, and about *Diſguun* in the Province of *Laar*. The Plant receives ſo great an Alteration from the Nature of the Soil wherein it is nouriſhed, that at a ſmall Diſtance from the Places above-mentioned its Juice is not worth the gathering, being either exceeding ſmall in Quantity, or quite void of its fœtid Smell. The Plant is even reported to be ſo ſweet not far from *Diſguun*, that the Goats greedily browſe upon its Leaves, and become ſurprizingly fat.

Some diſtinguiſh two *Species* of the Plant, naming that which affords but little Juice *Hus-jeh*; but *Kæmpfer* aſſerts that their Difference is entirely owing to the Soil in which they grow.

The *Aſſa Fœtida* is now obtained only from the Root: Wherefore the Diſtinction which the Ancients made of it, with Reſpect to the Part of the Plant from which it was drawn, is no longer in Uſe. The Root till it is four Years old yields very little Juice, and is never cut; but the older and larger it is, the greater Quantity is got from it. When the Juice firſt flows from its Veſſels it is extremely white, liquid, and fat, but not glutinous, being exactly like Cream; but by the Action of the Air and Sun, it becomes browniſh, and viſcous. The fœtid Smell is the Mark of its Virtue; for the ſtronger that is, the better is the *Aſſa Fœtida*. On this Account, what we have in *Europe* is not to be compared to the Juice when firſt taken from the

Root; since it loses so much with Age, that, according to *Kæmpfer*, one Drachm of the fresh Juice has a stronger Smell, than an hundred Pounds when old and dry, as it is here sold by the Druggists.

The Business of collecting *Assa Fœtida* is every Year performed with great Order. About the Middle of *April*, at which Time the Leaves of the Plant grow pale, and begin to wither, several Families, or the Inhabitants of some neighbouring Hamlets flock together to the Mountains; where they form themselves into a Society, agreeing to Share in common the Profits of their Labour. They divide into small Companies, to each of which a certain Tract of the Mountain is allotted, so that the Management of about two thousand Plants is usually undertaken by a Company consisting of four or five Men. They immediately fall to their Work with Alacrity and Emulation. In the first Place, they dig up the compact Earth, which encompasses the Root, with a Spade, and lay it bear to the Depth of a Span. Then with their Hands they twist off the Foot-Stalks of the Leaves, and the Fibres from the Top of the Root, wherewith it is generally covered. Afterwards they spread the Earth again lightly round the Root to the Top, and lay over it small Bundles, made of the Leaves which have been pulled off, or of whatever Herbs they can meet with. Upon these they put a Stone to hinder them from being carried away by the Wind, which is here oftentimes very boisterous. This Precaution is necessary to defend the naked Root from the Sun-Beams; because being once struck by them, it rots in the Space of a Day. In thus preparing the Roots they commonly spend about three Days, and then return Home.

Thirty or forty Days after they repair again to the Mountains, every one to his respective Place, provided

provided with a ſharp Knife to cut the Roots, a broad Iron-Spattle to ſcrape off the Juice, and a Cup fixed to his Thigh to receive it. They have all likewiſe two Baſkets hung over their Shoulders, to carry the Juice when they have gathered it. We muſt obſerve, by the Way, that each Company divides the Roots, which grow in the Tract of Ground allotted to it, into two Claſſes, upon which they are employed every other Day alternately; for when the Juice has been drawn off, the Root requires the Space of a Day to recover a freſh Stock, and as long a Time that the Quantity which has iſſued from it may be duly inſpiſſated.

Being now arrived at the Place where they propoſe to begin, they each without Delay apply themſelves to a Root. They remove the Cover, and a Portion of the Earth which would otherwiſe be an Impediment to them. Then they cut off the Top of the Root tranſverſly, ſo that the Trunk repreſents a Diſk with a plane Surface, whereupon the exuding Liquor may ſettle, without Danger of flowing over. Afterwards they defend the wounded Root from the Sun in the ſame Manner as before, only with this Caution, that the Bundles may not touch upon the Diſk they bend them into the Form of an Arch. And thus in Order they treat all the Roots of the firſt Claſs.

The next Day they proceed to the Roots of the ſecond Claſs, and treat them as the former. The third Day, returning to the firſt Claſs, and withdrawing the Covers, they ſcrape off the Juice with their Spattles, and put it into the Cups which hang to their Thighs. Then removing ſo much of the Earth as may ſerve to allow them free Acceſs to the Root, they pare a very thin circular Slice from the Surface of the Diſk, ſcarce as thick as an Oat-Straw; for it is ſufficient if the dry external Surface, whereby the

the Pores were ſtopt up, be ſo far taken away, that a new Quantity of Juice may exude from its Canals. They empty their Cups now and then occaſionally into larger Veſſels, or upon Leaves ſpread upon the Ground, and expoſe the Juice to the Sun till it becomes harder. By this Means it acquires a Colour differing from its natural White according to its Softneſs, and the Difference of its Situation, by which it admits the Rays unequally. The Work is finiſhed by covering the Root as laſt mentioned. The fourth Day they return to the ſecond Claſs. They gather the Juice, cut the Roots again, and cover them. And thus the ſecond Operation is compleated by cutting the Roots three Times, and collecting their Juice twice. Then they leave them untouched for eight or ten Days, and carry the Juice Home in their Baſkets hung over their Shoulders upon a Pole. The Quantity uſually taken back by a Company of four or five Men is about fifty Pounds in Weight. The Juice of this firſt Gathering is not accounted the beſt Aſſa Fœtida, but inferior to that which is got afterwards.

The Roots having been left for eight or ten Days, to recover a freſh Stock of Juice, they make another Gathering. They begin with the Roots of the firſt Claſs by removing the Bundles and the Earth. They collect the Juice, pare away the Tops of the Roots, and cover them. The next Day they go to the ſecond Claſs: And ſo the ſame Operation is performed on the ſame Roots every other Day for three Times, and at length they are covered up again, and left.

At the End of three Days the Labourers take their laſt Journey to the Mountains, and the Roots of both Claſſes are cut three Times alternately as before. After this they are left uncovered, whence they ſoon periſh by the Admiſſion of the Air and

Sun. Thus the Buſineſs of collecting Aſſa Fœtida is generally concluded: Though if there be any Roots of a larger Size than ordinary (*viz.*) ſuch as are twenty Years old or upwards, they are not left till they are nearly exhauſted of their Juice.

In a chymical *Analyſis* two Pounds of choice Aſſa Fœtida yielded five Ounces, and three Drachms, of milky Phlegm, partaking of the Smell of Garlick, and acid; one Ounce and ſeven Drachms of reddiſh Phlegm, both acid and urinous; two Ounces, two Drachms, and thirty ſix Grains of fœtid Oil, which was yellowiſh, fluid and tranſparent; and eleven Ounces, five Drachms, and twenty four Grains of red Oil, of a thicker Conſiſtence. The black Maſs remaining in the Retort weighed nine Ounces and two Drachms. This being calcined in a Crucible for thirty Hours, left two Ounces, four Drachms, and thirty ſix Grains of gray Aſhes; from which were extracted twelve Grains of fixt neutral Salt. The Loſs of Parts in Diſtillation was two Ounces, four Drachms, and twelve Grains; in Calcination ſix Ounces, five Drachms, and thirty ſix Grains.

Hence it appears that Aſſa Fœtida is compoſed of a copious fœtid Sulphur, both thick and thin, a large Portion of acid Salt, a ſmall Quantity of volatile urinous Salt, and a little Earth. From theſe Principles ariſes a Salino-ſulphureous Compound, whereof a conſiderable Portion diſſolves in Spirit of Wine, and the greateſt Part in hot Water.

The ancient Phyſicians have aſcribed many excellent Virtues to *Laſer*. They ſay that being taken internally it cures the Palſy and other Diſorders of the Nerves, provokes the *Menſes* and Urine, greatly helps the Concoction of Food, exhilarates the Mind in Sorrow, deſtroys the Poiſons of Darts and Serpents, fattens the Body, cures the Plague and malignant

lignant Diſtempers, and that it is uſeful in the Dropſy, Jaundice, Pleuriſy, Spaſmodick Contractions, Aſthma, difficult Reſpiration, Coughs, and Hoarſeneſs. Externally applied they ſay that it reſolves tumid Spleens, draws down the menſtrual Purgations, and that being mixed with Wax it extracts Corns of the Feet, if previouſly ſcarified round about with a Knife: That it is likewiſe very ſerviceable to invenom'd Wounds, the Bites of poiſonous Animals, crude Ulcers, Carbuncles growing about the Fundament, and to rheumatick and gouty Pains.

Garcias and others tell us that no ſimple Medicine is in more common Uſe among the *Indians* than Aſſa Fœtida, both in Phyſick and as a Seaſoning in Food. They mix it with moſt of their Victuals, as their Soops, Pot-Herbs, *&c.* and firſt rub it over the Pot in which they are boiled. They take it as a Medicine to cure Loathing and raiſe the Appetite, to ſtrengthen the Stomach, to diſcuſs Flatulencies, and to excite Venery.

However *Galen*, *l.* 8. *de Simp.* aſſerts that all the Parts of *Silphium* are of a flatulent Nature, and therefore difficult of Digeſtion: But that outwardly uſed they are more efficacious, particularly its Juice, to which he attributes a powerful Virtue of drawing, as alſo of ſoftening and diſſolving Excreſcencies.

Pliny likewiſe accuſes *Laſer*, when mixed with Food, of being hard of Digeſtion. He ſays it produces Flatulencies, and Belchings, and is hurtful to the Urine. Moreover, he is afraid of uſing it in the Tooth-Ach from a very remarkable Inſtance which he had known of its bad Effects, in a certain Man whom it occaſioned, in that Diſorder, to throw himſelf headlong from an high Place to put an End to his Anguiſh. He alſo adds, that if it be daubed upon the Noſtrils of Bulls, it makes them mad.

Wherefore it is not to be applied externally without Caution.

In *Europe* Aſſa Fœtida is not only rejected entirely from among Seaſonings, but is alſo ſeldomer uſed in Medicines on Account of its offenſive Smell. It is however preſcribed to Advantage in flatulent Colicks, and hyſterick Affections, as well externally as internally. It is likewiſe proper for provoking the *Menſes*, the *Lochia*, and Secundines. It powerfully promotes Perſpiration and Sweat; drives malignant Humours from the Centre to the Circumference, and is therefore of great Service in malignant Fevers, the ſmall Pox, and the Meaſles: And it is a good Medicine in nervous Affections and the Palſy. It may be preſcribed from gr. xij. to ʒj. or to ʒij. It is commended in an Aſthma to be taken in a ſoft Egg, and is extolled as a moſt efficacious Remedy againſt the Force of Opium and other Narcoticks. By its Smell it frees Women from the hyſterick Suffocation. Outwardly applied it powerfully ſoftens and reſolves; wherefore it is commended for reſolving Tumours of the Spleen.

An anti-hyſterick Tincture is prepared from Aſſa Fœtida with tartarized Spirit of Wine, which is given to ʒij. for a Doſe.

Take of Aſſa Fœtida ʒſs. Sal Ammoniack gr. xviij. Extract of red Poppies q. ſ. Mix and make a Bolus to provoke a *Diaphoreſis*.

Take Aſſa Fœtida and Myrrh ā ℈j. Extract of Saffron gr. ij. Conſerve of Marygold-Flowers q. ſ. Make a Bolus to provoke the *Menſes*.

Take of Aſſa Fœtida ℈j. Caſtor gr. vj. prepared Amber gr. xx. Extract of Baum q. ſ. to make a Bolus to be given in the hyſterick Paſſion.

Take Aſſa-Fœtida, Juniper Berries and Caſtor, ā ʒſs. Honey ʒivſs. Make them into an Electuary.

tuary. The Dose is ʒj. against too much Sleep occasioned by taking Opium or other Narcoticks.

ARTIC. III. *Of* BDELLIUM.

We are not sufficiently acquainted with the History of the Βδέλλα or Βδέλλιον of the ancient *Greeks* to determine with Certainty what it was, or whether that Drug has come down to us.

Dioscorides distinguishes three Kinds of Bdellium. The first is the Tear of a Plant growing in the Country of the *Sarracens*. It is a transparent Gum, like Glue, within fat, easily melting, free from the Mixture of Wood and Filth, of a bitter Taste, and Smelling, when burnt, like the *Unguis odoratus* *. The second is sordid, black, in large Glebes, with the Smell of *Aspalathum*, and brought from the *Indies*. The third, coming from a Town called *Petra*, is dry, resinous, and livid; but with Respect to Virtue he reckons this the second.

Galen, in his Book on Simple Medicines, makes mention of two Sorts of Bdellium: One from *Scythia*, which is blacker and more resinous; and another from *Arabia*, of a clearer Colour, and moist, and easily growing soft.

* The words of *Dioscorides* are these. Βδέλλιον ἐστι ἐνῶδες ἐν τῇ θυμιάσει, καὶ ἐοικὸς ὄνυχι, i. e. *Bdellium est odoratum in Suffitu, et simile Ungui*. Some Authors suppose the Word *Onyx* or *Unguis* to signify the Nail of the Hand, of which they imagine Bdellium to have a Resemblance, in being sometimes, like that, marked with Spots. But it is more probable that *Dioscorides* here means the *Unguis odoratus*, which was Part of a Shell found in the *Red Sea*, and other Places, of a Substance like Horn, nearly resembling our *Blatta Byzantina*, if not the same. See *Dale*'s *Pharmacologia*, p. 522. and p. 549, 550, &c.

Pliny ſpeaks of Bdellium thus. " Near this Place " (ſays he) is *Bactriana*, where the Bdellium is very " famous. It is a black Tree, of the Bigneſs of " an Olive, with a Leaf like the Oak, and a Fruit " and Nature like the wild Fig-Tree. Its Gum " ſome call *Brochon*, others *Malachran*, others *Mal-* " *dacon*, and when it is black, and in large Maſſes, " *Hadrobolon*. It ought to be tranſparent, like " Wax, of a quick Smell, and, when rubbed be- " twixt the Fingers, fat, and of a bitter Taſte " without Acrimony. It grows in *Arabia*, in *In-* " *dia*, and *Media*, and at *Babylon*. Some call that " which is brought from *Media*, *Peraticum*. This " is more brittle, dry, and bitter; but the *Indian* " is gummous, and moiſter."

By theſe Accounts we may diſcover how uncer- tain the Hiſtory of Bdellium is in the Writings of the Ancients. Nor have the *Arabians* thrown any greater Light upon it; ſince *Serapio* makes two Kinds of Bdellium: One from *Judæa*, which *Avi- cenna* calls *Mochel Judaïcum*, and which ſeems to be the Bdellium of *Dioſcorides*; another which he tells us is the Fruit of a certain Plant reſembling a Palm- Tree. This *Avicenna* calls *Mochel Mecchenſe*.

Neither are the modern Authors agreed upon this Head. For ſome, according to *Matthiolus*, have ſuppoſed Myrrh to be the true Bdellium. Some, ſays *Cluſius*, believe *Anime* to be the true Bdellium. Others, as *Olivus* teſtifies, underſtand by the Word *Bdellium*, the precious Stone called a Carbuncle; others, Cryſtal. *C. Bauhine*, in *Matthiolus*, men- tions ſix different Sorts of Bdellium.

The firſt is in large Glebes, of a reddiſh Colour, and, when it is broken, flies into a great Number of ſmall Grumes, moderately ſhining.

The ſecond is in ſmall Glebes, of a browniſh Colour, within reddiſh, and dividing, when broken, into

into two Parts, as if it were cut through the Middle. It is transparent, dense, glutinous, and fat, and when laid in a warm Place, a Moisture exudes from it in white Tears.

The third is black, of a dark reddish Colour within, glutinous, and tasting like a Mixture of Frankincense and the Gum of Cherry-Trees.

The fourth has likewise a black Colour, but within a browniſh Yellow, or sometimes Purple. It is very transparent, soft, and glutinous, like the Gum of the Cherry-Tree, and has the same Taste.

The fifth has a Colour and Taste like the preceding, but within it is variegated with pale or white Spots.

The sixth is pale or white, in oblong Grumes of a moderate Bigness, composed of many long, concreted Drops. This has a bitter unpleasant Taste, and more acrid than all the other Sorts.

Samuel Dale, in his *Pharmacologia*, describes two Sorts of Bdellium. "The first, says he, is a Sub-"stance between a Gum and a Resin, fat, like "Wax, tenacious, glutinous, of a ferruginous Co-"lour tending to Black, something like Myrrh, "which it resembles in Taste and Smell. It is "brought from *Arabia*, *Media*, and *India*. The "second is a resinous Substance, hardish, blackish, "and friable, in concreted Drops, with the Taste and "Smell of the former. It is brought from *Guinea*."

Peter Pomet, in his History of Drugs, observes, that many Sorts of Gum are often found in the Shops under the Name of Bdellium. Sometimes a Resin brought from *America*, called *Anime*, which flows from a Tree named *Courbaril*; sometimes the Resin of another Tree named *Caninga* or *Cassia caryophyllata*; sometimes the Resin of the *Costus corticosus*, which he calls Gum *Alouch*; or others not so well known.

But what we meet with in our Shops for true Bdellium, is not different from the firſt Sort deſcribed by *Dale*. It is a Gum-Reſin in Glebes of different Figures and Magnitudes, externally ſometimes reſembling common Myrrh, of a reddiſh Colour like the Ruſt of Iron, ſometimes of a deep Brown with a Caſt of Red; internally ſomewhat tranſparent, and like Glue. It is brittle, but grows ſoft in the Mouth, and ſticks to the Teeth. Its Taſte is bitteriſh, much weaker than the Taſte of Myrrh, and its Smell not unpleaſant, eſpecially when it is burnt. It takes Flame, and continues burning a long Time with a crackling Noiſe; during which, ſmall liquid Grains, as it were, are obſerved to ouze out of it in ſeveral Places. It is often brought to us in Caſks mixed with Myrrh, and ſometimes with Gum *Senega*. If this be not the beſt Sort of Bdellium mentioned by *Dioſcorides*, it comes at leaſt very near it.

We have no certain Account of the Tree which produces Bdellium. According to *Pliny*'s Deſcription, it is black, of the Bigneſs of an Olive-Tree, with Leaves like the Oak, and a Fruit like the wild Fig. Others will have it to reſemble very much the Tree which produces Myrrh; and *Thevet* affirms that he has ſeen two thouſand Trees which yielded Myrrh and Bdellium growing together in the ſame Wood. *Lobelius* and *Pena* relate that they have picked from among other Commodities many Twigs of this Tree, of a ſolid Subſtance, covered with an hard Bark, of a blackiſh Colour, and beſet with a great Number of ſtrong prickly Thorns. Whence *Dale* queſtions if it be not the Tree which *Plukenet* calls *Arbor lacteſcens acculeata, foliis quernis, Americana, (Bdellifera fortè,) ſive Arbor Bdellium ferens in America, Phytogr. Tab.* 145.

One

One Part of Bdellium diſſolves in Water; and the other Part in Spirit of Wine, or Oils. It takes Fire, and burns with a vivid and durable Flame; but crackles a little, by Reaſon of the ſaline and aqueous Parts mixed with the Reſin. It diſſolves entirely in Spirit of Wine tartarized, in alkaline Liquors, and in Wine or Vinegar.

Bdellium is accounted emollient, and more efficaciouſly ſo when freſh. It is likewiſe greatly diſcutient, aperient, and deterſive, but at different Ages. If your Intention be to diſcuſs, chuſe it of a moderate Age; if only to deterge, the older it is, the better. It is ſeldom uſed inwardly; though it is commended in ſome Affections of the Breaſt, in Coughs, in difficult Reſpiration, and Impoſthumes of the Lungs; as alſo to provoke Urine and expel Gravel. Many Authors, particularly *Solenander*, *Foreſtus*, and *Riverius*, highly extol it in the hemorroidal Flux, being made into Pills and given to ʒj. in a Doſe: For it powerfully reſtrains the Flux, eſpecially if aſſiſted by a Fumigation of the ſame received by the *Anus*. Outwardly applied, it ſoftens and reſolves Tumours, ripens Abſceſſes, and heals freſh Wounds.

Take of the beſt Bdellium ʒxij. Seeds of Biſhop's Weed ʒiij. Mother of Pearl calcined, and prepared Amber, ā ʒiiſs. Yellow Myrobalans (or any of the other Sorts ℥j. Honey of Roſes q. ſ. Mix and make Pills. The Doſe is ʒj. in the hemorrhoidal Flux.

ARTIC. IV. *Of* GALBANUM.

Galbanum, *Off.* Χαλβάνη, *Dioſc. Chene*, Arab. Galbanum is a fat Subſtance, ductile like Wax, ſemi-

ſemi-pellucid, ſhining, of a middle Nature between a Gum and a Reſin; for in the Fire it flames like Reſin, and in aqueous Liquors diſſolves like Gum, and not in Oils. When freſh it is almoſt tranſparent, of a whitiſh Colour, afterwards inclining to Yellow, or Red; of an acrid, bitteriſh Taſte, and ſtrong, unpleaſant Smell. In the Shops we meet with two Sorts: One in ſmall Grumes or Tears, commonly called *Galbanon en larmes*; another in Maſſes, called *Gabanon en Pains*. Galbanum ought to be choſen freſh, pure, fat, moderately viſcous, inflammable, and compoſed of clear whitiſh Grumes. When it is brown, and mixed with Earth, Gravel, Wood, or other Droſs, it is not good. It comes to us from *Syria*.

This Tear was known to the ancient *Greeks*. *Diſcorides* ſays it drops from a Sort of *Ferula*, which was called *Metopion:* And accordingly it is now found to flow from a ferulaceous Plant, named *Oreoſelinum Africanum*, *Galbaniferum*, *fruteſcens*, *Aniſi folio*, *Inſt.* R. H. 319. *Ferula Africana*, *Galbanifera*, *Liguſtici foliis et facie*, *Paradis. Batav. Aniſum Africanum fruteſcens*, *folio et caule rore cæruleo tinctis*, *Pluk. t.* 12. *Oreoſelinum Aniſoides arboreſcens*, *Liguſtici foliis et facie*, *flore luteo*, *Capitis-bonæ-Spei*, *Breyn.* 2. *Prodr.* It grows in *Perſia*, and many Parts of *Africa*, particularly in *Barbary*. The milky Juice contained in this Plant has all the Marks of the true Galbanum. It ſometimes flows ſpontaneouſly from the Joints; but is generally obtained by making an Inciſion into the Stalk about three Fingers Breadth above the Root, from which it iſſues in Drops, and in a few Hours becomes dry and hard enough to gather.

The *Ferula Galbanifera* of *Lobelius*, *Icon.* 779. which *Caſpar Bauhine* calls *Ferulago latiore folio*, is quite a different Plant. For this, as *Tournefort* hath obſerved,

obſerved, yields no Galbanum, but another Gum of a deep red Colour, without any ſtrong Smell.

In a chymical *Analyſis*, two Pounds of choice Galbanum afforded three Ounces and two Drachms of reddiſh Phlegm, which had ſome Smell, and was a little acid; three Ounces, five Drachms, and thirty four Grains of red, acid Liquor; ſeven Drachms and thirty ſix Grains of brown empyreumatick Liquor, partly acid, and partly alkaline; one Ounce, ſeven Drachms, and thirty Grains of fluid brown Oil; five Ounces, and five Drachms of thicker Oil, of a green Colour tending to brown; and ſeven Ounces of Oil of the Conſiſtence of Honey. The black Maſs remaining in the Retort weighed ſeven Ounces, one Drachm, and thirty ſix Grains; which being calcined in a Crucible for twenty Hours left five Drachms and forty eight Grains of Aſhes. From theſe were drawn, by Lixiviation, thirteen Grains of fixt Salt merely alkaline. The Loſs of Parts in Diſtillation was two Ounces and four Drachms; in Calcination, ſix Ounces, three Drachms, and ſixty Grains. The Oil which was obtained, being purified by repeated Diſtillations, appeared of an elegant Sky-blue Colour.

Galbanum diſſolves in Wine and Vinegar, as alſo in warm Water; but not eaſily in Oils, or Spirit of Wine. It conſiſts of a tartarous Salt, and a thick fœtid Oil.

Galbanum taken inwardly has the ſame Virtues with Ammoniack, but is ſomething weaker. It diſſolves tenacious Phlegm; and for this Reaſon is of Service in Aſthmas, and old Coughs. It diſcuſſes Wind, and gives Eaſe in colick Pains; opens Obſtructions of the Womb, promotes the menſtrual Purgations, expels the *Fœtus* and Secundine, and cleanſes the Womb after Delivery. It relieves

hysterick Affections proceeding from Obstruction of the Womb. It is also commended against coagulating Poisons. A Fumigation of it is serviceable in Suffocation of the Womb, and Fits of the Epilepsy. Externally it incides, draws, softens, and ripens; and is therefore an Ingredient in many Plaisters for suppurating Buboes, or other Swellings, and for resolving scirrhous Tumours. Applied to the Navel it appeases hysterick Disorders; and allays Spasms of the Intestines, Convulsions of the Limbs, and helps the Palsy, being spread upon Leather, and applied to the Part affected.

Take Galbanum and Gum Ammoniack, ā ʒij. *Riverius*'s Vitriol of Iron ʒss. *Diagrydium* ʒx. Syrup of Buckthorn q. s. Mix and make Pills. The Dose is from gr. v. to ℈j. in Suppression of the *Menses*, and to promote the Purgations after Delivery, when stopped, provided there be no Inflammation,

Take Galbanum, Assa Fœtida, and Myrrh, ā ʒj. Camphore and Salt of Amber, ā ℈ss. Borax ℈ij. Syrup of Mugwort q. s. Mix and make Pills. The Dose is ℈j. in the hysterick Passion, and Suppression of the *Lochia*.

Take Galbanum, Assa Fœtida, and Myrrh, ā ʒss. Castor ℈j. Mix and make Troches, to be used by Way of Fumigation in hysterick Fits.

Take of Galbanum q. v. dissolve in Oil of Amber and Oil of Spike, ā q. s. to make a Liniment, with which anoint Parts affected with Convulsions, or a Palsy.

From Galbanum is prepared the *Galbanetum Theophrasti* of *Paracelsus*, which is accounted an excellent Application in Contractions of the Nerves, spasmodick Affections, and convulsive Colicks, and to rub upon paralytick Limbs. It ought to be made thus.

Take

Take of Galbanum ℔j. Gum Hedera ʒiij. Oil of Turpentine ℔ſs. Oil of Bays and Oil of Lavender, ā ʒj. Let them ſtand together in Digeſtion for two or three Days, and then diſtil them from a Retort. The Liquor which ariſes in the Diſtillation is to be put by for Uſe.

ARTIC. V. *Of* MYRRH.

The Ancients have mentioned many Kinds of Myrrh, which they have not exactly deſcribed, or diſtinguiſhed from each other. We likewiſe find at preſent in Cheſts of Myrrh many Glebes differing in Taſte, Smell, and Conſiſtence. Sometimes they have a Smell of Myrrh, not unpleaſant, ſometimes ſtrong and diſagreeable; ſometimes they are intenſely bitter and nauſeous, and ſometimes they have a gentle Bitterneſs; beſides that they are often mixed with Glebes of Bdellium, and Gum Arabick. Whence it is evident that there muſt be ſome Difference between the Tears of Myrrh, according as they flow from different Trees, or from different Parts of the ſame Trees, or are gathered at different Seaſons of the Year, according to the different Culture of the Trees, or as they iſſue either ſpontaneouſly, or from Inciſions.

Fuchſius ſuſpects that the Myrrh of the Shops is not the true Myrrh of the Ancients, but that worſer Sort, which *Dioſcorides* calls *Caucalis* and *Ergaſine*. But I am of Opinion that the ſeveral Sorts of Myrrh enumerated by the ancient Writers are at this Time brought to us mixed together.

Braſſavolus and others have regarded our Myrrh as the Bdellium of the Ancients: But they are eaſily diſtinguiſhed; becauſe Myrrh is not ſo viſcous as Bdellium,

Bdellium, has a more bitter Taſte, and a ſharper penetrating Smell. *Langius* and others, rejecting our Myrrh, ſubſtitute Benzoine for the Myrrh of the Ancients; but in Benzoine, as *Langius* himſelf confeſſes, the Bitterneſs, which *Dioſcorides* requires in Myrrh, is wanting. I therefore think, with *J. Bauhine* and others, that the true Myrrh is ſtill brought to us, though often mixed with Gum. Nor is it any Argument to the contrary that the Ancients reckoned Myrrh among the more agreeable Aromaticks, or that they uſed it to give a Flavour to their moſt precious Wines: For, as we have before ſaid, there is no diſputing about Taſtes and Smells; ſince the Inconſtancy of Mankind is in nothing more obſervable than in Reſpect of theſe.

Two principal Kinds of Myrrh were diſtinguiſhed by the Ancients; the *liquid*, called *Stacte*, and the *ſolid*, which was brought to them in Glebes. Of the liquid Myrrh they moreover make two Sorts: The one was native, which either flowed of its own Accord from Trees before they were cut, to which, ſays *Pliny*, none is preferable; or it was expreſſed from the freſh Glebes before they were dry, whilſt their interior Subſtance was liquid and oily. Such Glebes of freſh Myrrh are ſometimes to be met with in our Shops, full of an oily Juice, to which alſo the Druggiſts give the Name of *Stacte*. The other Sort was factitious. It was made by pounding freſh Myrrh with a ſmall Quantity of Water, and then ſtraining. This Preparation is now in Diſuſe, and generally unknown. Some affirm that the liquid Storax of the Shops is the Tear of the Tree which yields Myrrh, and that it was the *Stacte* of the Ancients. But this Opinion is very falſe: For liquid Storax, as we have made appear *, is quite different from Myrrh, being a Juice obtained by Coction from the Bark of a Tree.

* *Mater. medic.* Tom. II. p. 492.

Of

Of ſolid Myrrh in Glebes the Ancients reckon up many Sorts. Among theſe the *Troglodytica*, ſo called from the Country of the *Troglodytæ* whence it was brought, is by *Galen* accounted the beſt. The next was the *Minnæa*, which was named from a Village belonging to the *Minnæi*. This Sort however *Dioſcorides* ſeems to diſapprove; unleſs, as ſome Authors will have it, the *Myrrha Aminea* of *Dioſcorides* be different from the *Myrrha Minnæa* of *Galen*; which is a Point not eaſy to decide.

We muſt not omit what *Galen* relates concerning the *Opocalpaſum* or *Opocarpaſum*, which in his Time was often found mixed with Myrrh, and reſembled the beſt Sort ſo nearly, that it could not be eaſily diſtinguiſhed. It was a poiſonous Juice, occaſioning Sleep and ſudden Suffocation. *Galen* tells us that he has ſeen many Perſons die, from unknowingly taking Myrrh in which there was a Mixture of *Opocarpaſum*. Of what Herb, Plant, or Tree, this *Opocarpaſum* was the Juice, none of the Ancients have informed us, nor have any of the Moderns yet diſcovered.

Dioſcorides ſpeaks of a Sort of Myrrh termed *Myrrha Bœotica*, which was the Root of a certain Tree growing in *Bœotia* cut into Pieces. This is now an entire Stranger to us.

But to return to the Myrrh of the Shops. *Myrrha*, *Off.* Σμύρνα, *Dioſc.* Μύρρα, *Hippoc. Ler*, *Mur*, *ſeu Mor*, *Arab.* It is a gummo-reſinous Juice, concreted into brittle Glebes of different Magnitude, ſometimes as large as a Filberd, ſometimes larger; of a yellow, reddiſh, or ferruginous Colour, ſomewhat pellucid and ſhining, and diſcovering, when broken, white ſemi-circular Veins, or Spots, like thoſe on the Nails of the Hand. It has a bitter, ſubacrid Taſte, and aromatick, though nauſeous; a ſtrong Smell, ſtriking the Noſe when it is bruiſed, and

and in burning diſperſes an Odour not unpleaſant. The beſt is friable, light, of an uniform Colour, bitter, acrid, and of a quick Smell. When it is black, heavy, and mixed with Droſs, it is bad. It is brought from that Part of *Æthiopia* which was formerly called the Country of the *Troglodytæ*.

Of the Tree which produces this Drug we have no certain Knowledge.

In a chymical *Analyſis*, two Pounds of choice Myrrh yielded three Ounces, and four Drachms, of reddiſh Phlegm, partaking of the Smell and Taſte of Myrrh; four Ounces, ſeven Drachms, and thirty four Grains of auſtere acid Liquor; one Ounce and five Drachms of Liquor, both acid and urinous; one Ounce, ſeven Drachms, and thirty two Grains of red Oil, which was tranſparent and ſcented; three Ounces, ſix Drachms, and thirty ſix Grains of brown Oil, ſomewhat empyreumatick, and of a thicker Conſiſtence, like Syrup. The black Maſs remaining in the Retort weighed nine Ounces, ſix Drachms, and fifty four Grains; which being calcined for twenty ſix Hours afforded two Ounces, three Drachms, and thirty ſix Grains of red Aſhes. From theſe were drawn by Lixiviation eighteen Grains of fixt neutral Salt. The Loſs of Parts in Diſtillation was ſix Ounces, two Drachms, and ſeventy Grains; and in Calcination ſeven Ounces, three Drachms, and eighteen Grains.

Myrrh takes Flame, like a Reſin; though it does not perfectly diſſolve, like Reſins, in oily Subſtances, but partly runs into Grumes: Nor does it freely diſſolve, like a Gum, in Water; but the greater Part remains undiſſolved, appearing like Mud. Rectified Spirit of Wine, by a long Digeſtion, extracts the reſinous Part, the Gum only remaining, quite void of Smell and Bitterneſs, which is ſoluble in Water, or at leaſt ſoftens, and is con-

verted into a tough Mucilage. In Spirit of Wine tartarized, or joined with the urinous Spirit of Sal Ammoniack, it diſſolves entirely.

Therefore Myrrh is compounded of Reſin, Tartar, and Sal Ammoniack, ſo intimately combined, that it is ſcarce poſſible to ſeparate them from each other.

Galen aſcribes to Myrrh a drying and moderately deterſive Quality: Others allow it an extraordinary reſolvent Virtue. Indeed it powerfully diſſolves thick, viſcid Blood, coagulated Bile, and glutinous, concreted Humours. Hence it is commended, internally, in Obſtructions of the Womb, and Bowels. It promotes the *Menſes*, the Purgations of Child-Bed Women, and the Flux of the Hemorrhoids; expels a dead *Fœtus*, and the Secundine. It diſcuſſes Infarctions of the Lungs; and is advantageouſly preſcribed in an Aſthma, Cough, or to reſolve Infarctions of the Lungs; as alſo in the Jaundice, in ſcorbutick Affections, and in Cachexies. It kills Worms, as well by its remarkable Bitterneſs, as by diſſolving and cleanſing away the viſcid Humour which covers the internal Coats of the Stomach and Inteſtines, wherein the Eggs of thoſe Animals lye concealed. It ſtrengthens the Stomach, helps the Concoction of Food, and diſcuſſes Wind. In malignant, putrid, and peſtilential Fevers, in the Small Pox, and Meaſles, it does good by removing the Putrefaction, by exciting a gentle *Diaphoreſis*, and by accelerating the Eruption upon the Skin. Againſt Ulcers, whether internal, or external, it is commended as a ſingular Balſam, correcting their Corruption in all Parts of the Body. For this Reaſon it is uſed to Advantage in an *Empyema*, in Ulcers of the Lungs, Liver, Kidneys, Womb, or other Bowels, and likewiſe in Dyſenteries. It is given in Subſtance, under the Form of a Bolus, or

Pills, from ℈ss. to ʒss. It is seldom given dissolved on Account of its Bitterness.

Externally, it attenuates, discusses, and is an excellent traumatick. It cleanses old Wounds, which are changed into Ulcers, and preserves them from verminous Putrefaction. It also resists Gangrenes and the Corruption of Wounds, proceeding from a Deficiency of Spirits in the Part injured; and it cures the *Caries* of Bones, whether mixed with Decoctions, Tinctures, Plaisters, or Unguents.

But Myrrh, however, is not always harmless; since its Smell, as *J. Bauhine* after *Galen* observes, in some Persons occasions the Head-Ach. Besides, it does not only provoke the menstrual Evacuations of Women, but also excites or increases all Eruptions of Blood whatsoever: Wherefore People who are subject to Spitting of Blood, to bloody Urine, or other Hemorrhages, ought not to use it, since it will probably recal their Disorder. Neither ought it to be given indiscreetly to pregnant Women, lest it should cause Miscarriage.

The Preparations of Myrrh most in Use, are the Tincture, and Oil.

The Tincture is drawn by rectified Spirit of Wine, either alone, whereby the resinous Part only is taken up; or mixed with the volatile urinous Spirit of Sal Ammoniack: And then the whole Substance of the Myrrh is dissolved. Either Tincture may be given from gutt. v. to ʒss.

The Oil is got by distilling Myrrh from a Retort. The Fire must be very gentle in the Beginning, and then being gradually increased, a thick Oil is obtained, mixt with an acid Spirit. The Oil separated from the Spirit, and distilled again with a large Quantity of Water, becomes limpid, thin, and odorous. Another Liquor, improperly called in the Shops Oil of Myrrh *per Deliquium*, is procured by

by encloſing ſome powdered Myrrh in the White of an Egg, boiled hard and ſplit, and hanging them up together by a Thread in a Cellar, or other damp Place. The Liquor which drops from them, being catched in a Glaſs-Veſſel, and evaporated by a gentle Heat to a Diminution of the fourth Part, is put by for Uſe. It is ſaid to clear the Face from Tan, Freckles, *&c.* and to obliterate Scars, and other Deformities of the Skin.

Take of choice Myrrh gr. xij. the aperient Saffron of Iron and Gum Ammoniack, ā gr. x. Syrup of Wormwood q. ſ. Make a Bolus to be taken Morning and Evening in Suppreſſion of the *Menſes*.

Take of Myrrh gr. xv. Borax ℈j. Cinnamon gr. xviij. Conſerve of Wormwood, or of Marygold-Flowers, q. ſ. to make a Bolus, which may be given to provoke the Menſes, or the Purgations of Child-Bed Women, and to expel a dead *Fœtus*.

Take Myrrh and Frankincenſe, ā gr. xv. Saffron powdered gr. vj. Balm of *Gilead* q. ſ. Make Pills to be uſed in the Beginning of a Conſumption, to reſolve crude Tubercles, and to heal ſmall Ulcers.

Take of choice Myrrh ℈ſs. diaphoretick Mineral and *Virginian* Snake-Root, ā ℈j. Syrup of July-Flowers q. ſ. Mix and make a Bolus to be given in the Small Pox, Meaſles, and malignant Fevers.

Take the Root of round Birthwort, *Florentine* Orris, and Euphorbium, ā ʒj. Myrrh and Aloes, ā ʒiſs. Make them into a Powder to be ſcattered upon a carious Bone. Or extract a Tincture from them with Spirit of Wine, which may likewiſe be uſed to rotton Bones.

ARTIC. VI. *Of* OPOPANAX.

Opopanax et Opopanacum, *Off.* Ὀποπάναξ, *Græc.* This is a Gum-Reſin in Drops about as big as a Pea, ſometimes larger, ſometimes ſmaller, outwardly of a reddiſh Colour, but inwardly yellow tending to white, of a diſagreeable ſtrong Smell, an intenſe bitter, acrid Taſte, ſomewhat nauſeous, and fat, yet ſo as to be friable. It ſometimes comes to us compacted into dirty Glebes, of a blackiſh red Colour, mixed with Fragments of Stalks and other Droſs. It ought to be choſen in clear, fat, and friable Tears, of a Saffron Colour on the Outſide, and whitiſh or inclining to Yellow within, of a bitter Taſte, and ſtrong unpleaſant Smell. When it is black, and mixed with Impurities, it is not fit for Uſe. It is brought from the *Eaſt*.

We are entirely ignorant of the Plant from which it exudes; though it was no Stranger to the *Greeks*. According to *Galen* it is drawn from the wounded Root and Stalk of the *Panax Heracleus*; but we have no certain Accounts in Authors of the Plant to which this Name was given *.

In a chymical *Analyſis*, two Pounds of the pureſt Opopanax yielded four Ounces and four Drachms of limpid, odorous, and ſubacid Phlegm; four Ounces, five Drachms, and twelve Grains of reddiſh Liquor, which was acid and empyreumatick; one Ounce, ſix Drachms, and ſixty Grains of Liquor, both acid, and urinous; one Ounce, one Drachm, and ſixty ſix Grains of Oil, which was tranſparent, thin, light, and reddiſh; four Ounces, one Drachm,

* It is generally believed to be the *Panax Heracleum majus* of *Gerard*, called by *Caſpar Bauhine Panax Paſtinacæ folio*, and by *John Bauhine Sphondylio vel potius Paſtinacæ Germanicæ affinis* Panax, *vel Pſeudo Coſtus flore luteo*. See *Dale*'s *Pharmacol. p.* 197. and *Miller*'s *Botan. Off. p.* 321.

and

and twelve Grains of thicker Oil, heavier than Water, and of a brown Colour. The black Mass remaining in the Retort, of a rare spongious Texture, weighed eleven Ounces, and one Drachm; which being calcined during twenty six Hours in a Crucible, left one Ounce, three Drachms, and thirty six Grains of brown Ashes; from which were extracted two Drachms and forty two Grains of fixt alkaline Salt. The Loss in Distillation was four Ounces, three Drachms, and sixty six Grains; and in Calcination nine Ounces, five Drachms, and thirty six Grains.

Opopanax takes Flame like a Resin, and dissolves in Water like a Gum; but it renders the Water milky by Reason of the large Quantity of its Oil. It therefore consists of Oil, Tartar, and an ammoniacal Salt, closely united.

Inwardly taken it incides and attenuates thick and viscid Humours, discusses Wind, and purges without Uneasiness. Wherefore it is given to Advantage in Disorders of the Brain and Nerves, in the Palsy, Epilepsy, humoural Asthma, old Coughs, Obstructions of the Mesentery and Bowels, and in Suppression of the *Menses*. The Dose is from ʒs. to ʒj. Outwardly applied it softens and discusses Tumours, resolves such as are scirrhous, as also Nodes and Swellings of the Nerves and Tendons.

Take of Opopanax ʒs. Saffron gr. vj. Cinnamon ℈j. Syrup of Wormwood q. s. Mix and make a Bolus to be taken in Suppression of the *Menses*.

Take Opopanax, the Root of *Florentine* Orris and Agarick, ā ʒs. Syrup of Hedge-Mustard q. s. to make a Bolus for the Asthma.

ARTIC. VII. *Of* SAGAPENUM.

Sagapenum et Serapinum, *Off.* Σαγάπηνον, *Græc.* *Sachabenigi ſive Sechbenigi*, *Arab.* This is a Juice of a middle Nature between a Gum and a Reſin, ſometimes in Drops like Frankincenſe, ſometimes run together into large Glebes, externally of a reddiſh Colour, internally ſomething like Horn, and growing ſoft and white under the Teeth, or betwixt the Fingers. It has a ſharp biting Taſte, and a ſtrong unpleaſant Smell, approaching to that of the Leek and Pine-Tree together, or reſembling as it were a Mixture of Aſſa Fœtida and Galbanum. Being put to a Candle it takes Flame, and entirely diſſolves, by boiling, in Water, Wine or Vinegar. We ſometimes find it in the Shops run together into impure Glebes or Maſſes, of an obſcure dirty Colour, but a Taſte and Smell like the purer Sort. The beſt is pellucid, of a reddiſh brown Colour on the Outſide, and appears within, when broken, to be compoſed of whitiſh or yellow Drops, grows ſoft and ſticky betwixt the Fingers in Handling, and diſperſes a ſtrong diſagreeable Smell. *Charas* mentions a Sort of Sagapenum of a white Colour both on the Outſide and within, which he thinks the beſt, ſuppoſing it to be freſh; but ſuch is very rarely to be met with in the Shops.

It was known to the ancient *Greeks*. *Dioſcorides* ſays it is Juice of a ferulaceous Plant which grows in *Media*. It now comes to us from *Perſia*, and other Eaſtern Countries, but the Plant from which it flows is unknown; though from Pieces of the Stalk, and from the Seeds, which are often found mixed with the Juice, it is generally ſuppoſed to be a *Species* of *Ferula*.

In

In a chymical *Analyſis*, two Pounds of the pureſt Sagapenum yielded ſix Ounces, three Drachms, and eighteen Grains of reddiſh, acid Phlegm, of a porraceous Smell, and a reſinous Taſte ſomething like the Juniper; three Ounces, two Drachms, and thirty ſix Grains of acid Liquor, of a Saffron Colour, or browniſh; one Ounce and one Drachm of alkaline urinous Liquor; one Ounce, ſix Drachms, and forty two Grains of Oil, which was tranſparent, fluid, and green; three Ounces, two Drachms, and forty two Grains of Oil, of an azure Colour; three Ounces three Drachms of thicker Oil, of a brown Colour tending to Red. The black Maſs remaining in the Retort weighed eight Ounces and ſixty ſix Grains: Which being calcined for twenty Hours in a Crucible, left one Ounce, three Drachms, and thirty ſix Grains of red Aſhes. From theſe were got one Drachm and nine Grains of fixt neutral Salt. In Diſtillation the Loſs of Parts was eight Ounces, ſix Drachms, and forty two Grains; in Calcination ſix Ounces, five Drachms, and thirty Grains.

Sagapenum therefore conſiſts of Sulphur, an acid and volatile urinous Salt, with a ſmall Quantity of Earth. Theſe Principles conſtitute a reſinous and ammoniacal ſaline Compound.

The *Arabian* Authors rank Sagapenum among Purgatives, though the *Greeks* have paſſed this Quality over in Silence. It has indeed a Virtue of moving the Belly, but ſo weak and inert, that it requires the Aſſiſtance of ſome other Cathartick. It moſt powerfully opens, diſcuſſes, and attenuates, and is greatly deterſive. Hence it is commended in Affections of the Breaſt proceeding from thick Phlegm, in hard and callous Tumours, eſpecially of nervous Parts, and in old Diſorders of the Head; in ſhort, whenever thick and coagulated Humours

are to be diſſolved and attenuated. It is preſcribed from ℈j. to ʒj. The Cuſtom hath obtained that this Drug is never given alone, but always mixed with other proper Medicines, and moſt frequently under the Form of a Pill by Reaſon of its diſagreeable Taſte. It is uſeful in the Aſthma, Obſtruction and Tumour of the Spleen; in the Dropſy, Diſorders of the Nerves, Spaſms, the Epilepſy, Trembling of the Limbs, and the Palſy. It provokes the menſtrual Purgations, and is ſaid to kill the *Fœtus:* For which Reaſon pregnant Women ought to abſtain from it. Moreover, *Meſue* aſſerts that it hurts the Stomach and Liver: And on this Account it is mixed with aſtringent and ſtrengthening Stomachicks, as with Spike, Maſtich, Cinnamon, *&c.* It is likewiſe commended againſt a quartan Fever, and Pills are made of it deſcribed by *Quercetan*, which are called *Pilulæ de Sagapeno Camilli*, from one *Camillus* an eminent Phyſician of *Genoa (viz.)*

Take of choice Sagapenum ʒvj. the pureſt Gum Ammoniack ʒiij. Extract of the Troches *Alhandal* ℥j. Scammony prepared ℥j. Sal Gem ʒiſs. Mix theſe with the Syrup of Violets, rendered acid with the Spirit of Vitriol or the like, and make Pills of the Bigneſs of Peas or Vetches. Let one be taken in the Beginning of the Paroxyſm, and be repeated for ſome Days. They are likewiſe ſerviceable in ſtubborn Affections, in hypochondriack Diſorders, and in Infarctions of the Bowels from thick and glutinous Humours.

Rolfincius aſcribes to Sagapenum ſo great a Power of curing Obſtructions, that he ſays, if it be only applied externally, it removes Obſtructions of the Bowels like a Charm. It alſo reſolves ſcirrhous

Swellings of the Spleen, Hardneſs of the Bowels, and aſſwages Pains of the Side.

ARTIC. VIII. *Of* SARCOCOL.

Sarcocolla, *Off.* Σαρκοκόλλη, *Græcor. Anſarot*, *Anazaron et Auzurut*, *Arab.* Sarcocol is a gummous Juice, ſomewhat reſinous, conſiſting of ſmall, or, as it were, crumbled Grumes, of a whitiſh Colour, reddiſh white, or red, ſpongious, friable, and ſometimes mixed with ſhining Grains; of a ſubacrid, bitter Taſte, with a flat Kind of Sweetneſs, unpleaſant, and ſomething nauſeous. This Juice ſeems at firſt to concrete into Drops as large as a Pea, or Hazel Nut, and to be afterwards broken into the Grains above deſcribed, which are not much larger than Poppy-Seed. It grows ſoft under the Teeth, diſſolves in Water, and being put to a Candle riſes up into Bubbles, and then breaks out into a bright Flame. It ought to be choſen of a rare Texture, ſpongious, white, and bitter. It is brought from *Perſia* and *Arabia*.

There is another Sort of Sarcocol, in foul Lumps, of a brown Colour, of which *Pomet* makes mention; but it ought to be rejected.

No Author, either among the Ancients, or the Moderns, has deſcribed the Plant which produces this Juice; and it is ſtill unknown.

In a chymical *Analyſis*, two Pounds of Sarcocol yielded two Ounces and ſix Drachms of tranſparent, reddiſh Phlegm, taſting a little ſaline, yet was ſomewhat inſipid, and gave Marks, though ſlight, of a urinous Alkali; five Ounces, ſix Drachms, and thirty ſix Grains of reddiſh acid Liquor; two Ounces, three Drachms, and thirty ſix Grains of Liquor, both acid, and urinous; three Ounces and ſix Drachms of fluid brown Oil; four Ounces and

and thirty ſix Grains of thicker Oil. The black Maſs remaining in the Retort weighed ſeven Ounces, ſix Drachms, and ſixty ſix Grains: Which being calcined for twenty four Hours in a Crucible, left ſeven Drachms and fifty four Grains of reddiſh brown Aſhes. From theſe were got one Drachm and nine Grains of fixt neutral Salt. The Loſs of Parts in Diſtillation was five Ounces, two Drachms, and forty two Grains; in Calcination ſix Ounces, ſeven Drachms, and twelve Grains.

Therefore Sarcocol conſiſts of a copious Oil, a moderate Portion of acid Salt, a large Quantity of alkaline Salt, both volatile and fixt, and a conſiderable Stock of Earth; from which ariſes a gummous or ſaponaceous, and ſomewhat reſinous, Compound.

Authors are not agreed concerning the Virtues of Sarcocol. The ancient *Greeks* have ſaid nothing of its purgative Virtue, and they only uſed it externally. The *Arabians* aſcribe to it a Quality of purging thick and glutinous Phlegm. *Galen* ſays it conſolidates Wounds, and dries without Corroſion. *Serapio* reckons it among Catharticks. He aſſerts that being outwardly uſed it eats away Fleſh in Ulcers, and that inwardly taken it ulcerates the Inteſtines, and occaſions Baldneſs; yet he propoſes it to be given from ʒj. to ʒiij. provided it be tempered, like Euphorbium, with Oil of Almonds, or Nuts. But *C. Hoffman* condemns and entirely diſallows the internal Uſe of it.

It is generally commended in Aſs or Women's Milk againſt Ophthalmies, or Fluxions of the Eyes, which it appeaſes by ſoftening the Acrimony of the Lymph. It likewiſe deterges, heals, and cicatrizes Wounds; and is therefore called *Sarcocolla* or *Fleſh-Glue*.

Take

Take of Sarcocol macerated in Milk ʒj. prepared Tutty ʒs. Mucilage of Quince-Seed extracted by Roſe-Water ʒiij. Mix and make a Collyrium for Inflammations of the Eyes.

Take Myrrh, Aloes and Sarcocol, ā q. v. Make a Powder to conſolidate Wounds.

CHAP. VIII.

Of Juices extracted from Plants by Art.

HAVING ſpoke of the liquid and concreted Juices, which flow from Plants, either ſpontaneouſly, or by Inciſion, we are now to treat of ſome other concreted Juices, which are drawn from their reſpective Plants by Art. Theſe either preſerve the Conſiſtence of a ſolid Extract; or they put on the Appearance of Salt. Of the firſt Kind are Aloes, Scammony, Gamboge, Opium, Acacia, Hypociſtis, and *Japan*-Earth; of the laſt, Sugar and Tartar.

ARTIC. I. *Of* ALOES.

Aloe et Succus Aloes, *Off.* Ἀλόη, *Dioſc. Labet et Cebur*, *Arab.* Aloes is an inſpiſſated Juice, which in the Shops is diſtinguiſhed into various Sorts, either from the Places whence it is brought, or from the *Species* of the Plants which produce it, or from ſome Difference in its Subſtance.

The Ancients reckoned but two Sorts, according to *Dioſcorides*: The one was pure of a yellowiſh red Colour, reſembling the Liver, and thence named *hepatick*; the other was impure, coarſe, and gritty, being only the Dregs of the finer Sort.

At

At present Aloes is most commonly distinguished in the Shops, from the Difference of its Substance, into the *Soccotrina*, *hepatica*, and *caballina*, the *Soccotrine*, *hepatick*, and *caballine* or *Horse-Aloes*: But this Distinction was unknown to the Ancients, who seem to have included the two former under one Name. For the hepatick Aloes named by the ancient *Greeks* Ἡπατὶς and Ἡπαλίζουσα, by the *Barbarians* was termed *Sycotina*, from συκωτὸν, a Word used by the modern *Greeks* to signify the *Liver*. But when the best hepatick Aloes was brought from the Island of *Soccotora*, it was then, instead of *Sycotina*, called *Sycotrina*, and *Soccotrina* *; by which we no longer understand, as formerly, the *hepatick*, but only the purest Aloes, of a reddish brown, or yellowish Colour, clear, and pellucid; whence it is also called *Aloe lucida*. It has a bitter, astringent Taste, somewhat aromatick, and a strong Smell, but not unpleasant.

That which is now called *hepatick Aloes* is dense, dry, opake, approaching to the Colour of the Liver, of a more bitter and astringent Taste, and stronger Smell.

Lastly, the *caballine*, which is the worst Sort, is heavy, dense, black, full of Earth and Gravel, extremely bitter and nauseous, and offensive to the Smell.

But we shall here, with the more accurate Writers on Botany, after *Commelinus*, distinguish Aloes into the *Soccotrine* or finer, the *common* or inferior, and the *fœtid* or caballine. Again, the *common*, and also the *fœtid*, when pure, are called *hepatick*, and both likewise, when impure, are called *caballine*.

The Soccotrine Aloes is very pure, bright, shining, fat, friable in the Winter, softish in the Sum-

* Likewise *Succotrina*, and in the new Catalogue of the College, *Socotorina* or *Socotorine Aloes*.

mer,

mer, growing ſticky in the Hands, yellowiſh, or reddiſh with a Caſt of Purple, and when reduced to Powder of a ſhining golden Colour. It has an aromatick bitter Taſte, and a ſtrong Smell, but not very ungrateful, being ſomewhat aromatick, not much unlike Myrrh.

It is drawn from a Plant named *Aloe ſuccotrina, anguſtifolia, Spinoſa, flore purpureo, Breyn. Prodrom.* 2. *Commelin. Hort. Amſtel. rarior.* 91. *Aloe Indiæ orientalis ſerrata, ſive Succotrina vera, floribus Phœniceis, Hort. Beaumont. Aloe Americana, Ananæ folio, floribus ſuavè-rubentibus, Pluk, Phytogr. tab.* 240. *fig.* 4. The Leaves of this Plant pulled from the Root being gently preſſed by the Hand, or an Inſtrument, the Juice drops from them into a Veſſel ſet under to receive it, and having ſtood all Night that the groſs Parts may ſubſide, it is poured off into another Veſſel, and placed in the Sun till it concretes and becomes dry, and then it acquires a yellowiſh Colour. It comes to us in Skins from the Iſland of *Soccotora.*

The inferior Aloes or hepatick is more obſcure, leſs ſhining, more denſe and dry, reſembling the Colour of a Liver, of a ſtronger Smell, and more intenſe bitter Taſte.

The Plant from which this Sort is obtained is called *Aloe vulgaris*, C. B. P. 286. This Plant grows both in the *Eaſt* and *Weſt*; and its Juice is prepared not only in ſeveral Places in the *Indies*, as in *Cambaïa* and *Bengal*, but alſo in many Parts of *America*, as in *Mexico*, *New Spain*, *Braſile*, and *Barbadoes*, &c. The Leaves cut ſmall and bruiſed are put into an oblong Veſſel, of the Form of a Cylinder, where they continue for twenty five Days, during which a Froth riſes to the Top, which being uſeleſs is thrown away. The upper Part of the Juice is then ſeparated from the Dregs, and by the Heat

Heat of the Sun concretes into the hepatick Aloes: And the Dregs inſpiſſated afford an impure Extract, called caballine Aloes.

The caballine Aloes is eaſily diſtinguiſhed from the other Sorts by its ungrateful, ſtrong Smell, though in other Reſpects it may agree pretty much with the common: It is ſometimes even ſo pure and bright, that its offenſive Smell is the only Mark whereby it can be known from the Soccotrine. For this Reaſon it is called *fœtid*; and *caballine* becauſe it is employed only by Farriers in the Diſtempers of Horſes, *&c.*

The Soccotrine Aloes is almoſt univerſally required for internal Uſe, and the hepatick for external; yet ſome, on the other Hand, aſſert that the hepatick, whether internally or externally uſed, is preferable.

It is certain *M. Boulduc* has diſcovered a great Difference between them; the bright Soccotrine Aloes containing a leſs Quantity of Reſin or Sulphur than the hepatick, and more of a Gum, or ſaline Subſtance. For four Ounces of Soccotrine Aloes being put into boiling Water and digeſted in a Sand-Heat, the whole Subſtance of the Aloes was diſſolved; but the Solution being ſet for ſome Hours in a cool Place, a certain reſinous or heavier Portion fell to the Bottom of the Veſſel, the aqueous Liquor ſwimming above it. The Sediment ſeparated from the Liquor, and expoſed to the Heat of the Sun till it was dry, weighed ſeven Drachms and twelve Grains. This reſinous Subſtance he diſſolved in Spirit of Wine, and found ſixty Grains of an earthy or gritty Matter not taken up by the Menſtruum. But the Spirit of Wine being evaporated by a gentle Heat, the Extract remaining, which was reſinous and entirely inflammable, weighed ſix Drachms and twenty four Grains. The aqueous Liquor loaded with Gum, evaporated to Dryneſs in an Aſh-Heat,

left two Ounces and one Drachm of a gummous Extract.

In like Manner four Ounces of hepatick Aloes being wholly diſſolved in boiling Water, and the Solution having ſtood ſome Time to cool, a reſinous Sediment ſubſided. This, ſeparated from the Liquor above it, and dried, was two Ounces in Weight; from which he got, by the Means of Spirit of Wine, eleven Drachms of an inflammable reſinous Extract, four Drachms of a Saline earthy Subſtance remaining; which I ſuſpect to be an eſſential Salt nearly reſembling Tartar. From the aqueous Solution evaporated he obtained nine Drachms of a gummous Extract.

In theſe Proceſſes the Loſs of Parts was very conſiderable, (*viz.*) ſeven Drachms and ſixty Grains from the Soccotrine Aloes; and five Drachms from the hepatick. Whence we may conclude that in the Soccotrine Aloes is contained a larger Stock of volatile Parts, whether ſaline or ſulphureous, than in the hepatick; about half as much Reſin; almoſt double the Quantity of Gum; and very little Earth and fixt Salt.

The ſame ingenious Author found by Experience that the Reſin is void of cathartick Virtue, which reſides only in the Gum, and that this even purges more ſtrongly when ſeparated from the Reſin. He likewiſe aſſerts that the Soccotrine Aloes purges more violently than the hepatick: And indeed the Soccotrine is more plentifully ſtocked with volatile and active Parts, to which the cathartick Quality is principally owing. Beſides, the ſaline Part in the hepatick is duly tempered with the reſinous, and not ſo in the Soccotrine. Neither is the Soccotrine preferable for external Uſe, but, on the contrary, greatly inferior to the hepatick, which includes a larger Stock of ſulphureous and balſamick Parts.

Parts. He moreover experienced the resinous Substance of Aloes to be possessed of an extraordinary balsamick Virtue, and to be very efficacious applied externally to Wounds. Hence it follows that the Hepatick Aloes ought to be preferred to the Soccotrine, both for external and internal Use: Which some Authors have before ventured to maintain, in Opposition to the vulgar Notion, as *Jubera*, a *Spanish* Apothecary, in *Zacutus Lusitanus*, and others in *Rolfincius*, p. 36. *De purgantibus.*

In a chymical *Analysis*, two Pounds of hepatick Aloes yielded four Drachms and thirty six Grains of limpid Phlegm, void of Taste and Smell; five Drachms and twenty six Grains of limpid, subastringent Liquor, which yet gave Marks of a volatile Alkali; ten Ounces, four Drachms, and eighteen Grains of Liquor, both acid and urinous, at first limpid, and of a bituminous Smell, afterwards reddish and empyreumatick; one Ounce, seven Drachms, and forty six Grains of thick Oil, of the Consistence of Syrup, of an acrid, pungent Taste, without Bitterness, and heavier than Water. The black Mass remaining in the Retort, of a rare Texture, light, and void of Taste, weighed fifteen Ounces and two Drachms: Which being calcined for some Hours left two Ounces, five Drachms, and forty two Grains of Ashes; from which were drawn three Drachms and thirty three Grains of fixt neutral Salt. The Loss of Parts in Distillation was three Ounces and seventeen Grains; and in Calcination twelve Ounces, four Drachms, and thirty Grains.

From this *Analysis* it follows, that Aloes consists of a copious thick Sulphur, a considerable Portion of ammoniacal Salt, and a small Quantity of Tartar, joined with a large Proportion of Earth. Whence arises a salino-gummous and resinous Compound.

Aloes,

Aloes, whether inwardly or outwardly uſed, has been much commended in all Ages. The Ancients aſcribed to it a Virtue of purging, of ſtrengthening the Bowels, opening the Veins, agglutinating Wounds and Ulcers, and ſtopping Fluxes of Blood. However, all Authors are not agreed upon theſe Virtues.

1. They doubt whether it ought to be reckoned among Eccoproticks, or among Catharticks. *Galen, on the Virtues of ſimple Medicines, l.* 6. ranks it with ſuch Medicines as draw forth the fecal Matter from the Inteſtines, (*viz.*) with Eccoproticks; and *Paulus Ægineta* agrees with him. The ſame *Galen, on the Compoſition of Medicines ſecundum loca, l.* 8. *c.* 2. writes, that Aloes has a weak purgative Virtue, and only diſcharges what is lodged about the Belly. Again, *on the Method of preſerving Health, l.* 6. *c.* 10. he ſays it only purges Bile in the Belly: And in another Place he excludes Phlegm, where he tells us, that Aloes is of no Service to Perſons who have the Coats of their Stomach loaded with thick *Pituita* or Phlegm.

But the *Arabians* are of a contrary Opinion: And *Meſue* aſſerts that this Medicine purges Bile, Phlegm, and other viſcid, tenacious and thick Humours, that it cleanſes the Head and Stomach, and frees the Liver of Infarctions.

In ſhort, Aloes not only diſcharges the fecal Matter lodged in the Belly, but alſo corrects the Faults of the Bile, by dividing and attenuating it when too thick, and by ſharpening it when inert, ſo that afterwards it may flow with greater Eaſe, and in greater Plenty, through the Inteſtines. But if it be given to promote a large Evacuation, it does not draw forth the Humours ſo much as the Blood, which it ferments and rarefies in the hemorrhoidal Veſſels. Therefore Aloes, given in a ſmall

Doſe, ought to be reckoned among Eccoproticks: But in a larger Doſe it becomes not ſo properly a powerful cathartick, as a noxious one. So that if we would augment its purgative Force, it ought not to be done by enlarging its Doſe, but by mixing with it ſome other Cathaiticks.

2. Authors are not more agreed with Reſpect to its Virtue of ſtrengthening the Bowels, as the Stomach, Liver, *&c.* and of correcting other Purgatives. *Dioſcorides* ſays, that Aloes mixed with other Purgatives renders them leſs hurtful to the Stomach. *Galen*, *on the Virtues of ſimple Medicines*, *l.* 6. aſſerts, that nothing is more agreeable to the Stomach: And *Paulus Ægineta* is of the ſame Opinion. "All purging Medicines (ſays he) are un-" friendly to the Stomach, except Aloes, which is " agreeable." *Meſue* pleads ſtrongly for its good Effects: For he propoſes Aloes as a Medicine greatly preferable to other Purgatives; which is ſo far from weakening the Body, like them, that on the contrary it ſtrengthens it; that it corrects the Faults of other purging Medicines, cures the Diſorders occaſioned by them, and increaſes their Efficacy. In fine, others have ſtiled it a ſalutary Balſam; inaſmuch as it preſerves the natural Humours, evacuates the preternatural, corrects thoſe between both, and defends all from Corruption: Whence this common Proverb; *Qui vult vivere annos Noe*, *ſumat Pilulas de Aloe*.

Some, however, have quite a different Opinion of the Virtues of Aloes, aſſerting that it hurts the Stomach and Liver, and even go ſo far as to tell us that it ſhortens Life. *Galen*, *l.* 3. *Aphoriſm* 15. condemns the too frequent Uſe of all Purgatives whatever, in Words to this Effect. "He who " purges himſelf twice, or even once a Month, for " Fear leſt a Load of Excrements ſhould be accu-

" mulated in his Body, will not only bring it to a " bad Cuſtom, but will alſo enfeeble and make it " worſe." Though this be not ſpoken of Aloes in particular, it is yet to be underſtood no leſs of that than of other Purgatives. And they who anſwer, from *Galen*, that Aloes is agreeable to the Stomach, meet with a ſharp Reply from *Scaliger* and *Cardan*. For they aſſure us that Multitudes, under the ſame Miſtake, hoping by this Medicine to prolong their Lives to a good old Age, have either died untimely by uſing it, or have been thrown into grievous Diſtempers.

Nor is the Judgment which *Fernelius* paſſes upon it, *l. 3. c. 9. of the Method of Cure*, much more favourable. " Aloes (ſays he) is hurtful to the " Liver, where it vellicates by its Bitterneſs and " Acrimony the ſmall Veins; it corrodes the Fun- " dament, and opens the Hemorrhoids. It is highly " prejudicial to thoſe who vomit or ſpit Blood, " or who are ſubject to any Flux of the ſame from " the Womb or Belly. In hot and dry Conſtitu- " tions, and in emaciated Bodies, it is uſeleſs, un- " leſs there be a large Accumulation of excremen- " titious Moiſture. Neither is it proper for Chil- " dren, nor ſafe for pregnant Women, nor conve- " nient for old People who are not replete with Ex- " crements."

Caſpar Hoffman, on officinal Medicines, writes, after *Helidæus*, that the internal Uſe of Aloes is to be ſuſpected, unleſs given to ſtir up the Motion of the Blood. He likewiſe thinks that the extravagant Commendations beſtowed upon it by *Meſue*, and others, are to be cautiouſly interpreted; eſpecially when they tell us it is agreeable to the Stomach, not only by occaſioning a Conſtriction, but alſo by an occult Quality. For as it is a Purgative, properly ſo called, it muſt neceſſarily include ſome-

thing contrary to Nature; which they themſelves tacitly acknowledge, when they attempt to correct it with Maſtich, Saffron, and Cinnamon, *&c.*

Now, in Order to compoſe theſe Differences, we muſt obſerve that Aloes, either immoderately, or unſeaſonably uſed, is hurtful; but that taken in due Time, and Meaſure, it is ſerviceable; particularly to opulent Citizens and other Perſons of Fortune, who living in the Midſt of Plenty, are inceſſantly cramming themſelves with Variety of Foods and Sauces; ſo that the Stomach, weakened and oppreſſed by the continual Labour of Digeſtion, and an enormous Quantity of Victuals, may ſometimes want the Aſſiſtance of this ſtimulating bitter Medicine, as well to incide and reſolve the crude, tenacious Humours, adhering to its Membranes, as to carry them off, together with the filthy Matter wherewith the Inteſtines are loaded. Aloes, I ſay, is very beneficial to Perſons who lead an idle, ſedentary, and luxurious Life, whereby the Veſſels of the Belly become more and more replete with thick, viſcid, and foul Humours. In this Caſe it relieves the Stomach and Inteſtines, by diſcharging the *Fæces* by which they are overloaded, and by helping Concoction. It is alſo ſerviceable to the Liver by diſſolving the inſpiſſated Bile and Blood, rendering both more fluid, and by exciting their Motion. And whatever Detriment theſe Gluttons may ſuffer from a too frequent Uſe of Aloes, it ought to be regarded as nothing, in Compariſon of the Ailments which a Redundancy of crude Humours might occaſion. But with Reſpect to Perſons who lead a Life of Sobriety we are to judge otherwiſe: For when the Body is free from Excrements, this Drug is injurious. In dry and bilious Temperaments, it augments the Dryneſs, and brings on an Atrophy. When the Bowels

are hot, it inflames them, and cauſes Hemorrhages, and always increaſes the Effervescence of the Blood.

3. The *Arabians*, and many of the Moderns, attribute to the Juice of Aloes a Virtue of opening the Veins, and drawing forth Blood. But the *Greeks* are quite ſilent upon this Virtue: On the contrary, *Dioſcorides* aſcribes to it a Power of ſtopping an *Hæmoptyſis*. However daily Experience teaches us, that a long Uſe of Aloes provokes the menſtrual and hemorrhoidal Fluxes, and expels the *Fœtus*, and therefore, when the accuſtomed Evacuations, either by the uterine or hemorrhoidal Veſſels are ſuppreſſed, all Phyſicians preſcribe this Drug with Succeſs to promote them.

This being granted, the next Queſtion is, Whether Aloes, which has a Power of opening the inferior Blood-Veſſels, does in like Manner open the ſuperior, and particularly the Veſſels of the Lungs, or no? *Dioſcorides* writes, that Aloes with Water or Whey ſtops the Spitting of Blood; and *Pliny* relates the ſame. But *Galen*, though he allows it an aſtringent and agglutinating Property, when outwardly applied, yet he no where propoſes it to be taken inwardly againſt the Spitting of Blood. Among the *Arabians*, *Serapio* following *Dioſcorides*, defends his Opinion: But *Meſue* makes no Mention of its Efficacy that Way. Some of the Moderns, as *Monardus*, &c. have aſcribed to Aloes both theſe Virtues (*viz.*) of opening the inferior Veſſels, and of cloſing the ſuperior; and indeed in ſome Medicines we find the like contrary Qualities. Nevertheleſs the moſt judicious Phyſicians, after *Fernelius*, are afraid of giving it in the Vomiting or Spitting of Blood; and I think with them, that it is adviſeable in theſe Caſes to abſtain from it, ſince we are provided with other Medicines leſs dangerous and much better.

4. As to the Virtue of agglutinating Wounds and Ulcers, and of ſtaying Fluxes of Blood, aſcribed to Aloes externally applied, it is ſcarce called in Queſtion by any; both the *Arabians* and Moderns herein agreeing with the Ancients. "Aloes (ſays *Galen*, *l.* 6. *concerning the Virtues of ſimple Medicines*) "agglutinates Sinuſes, and heals Ulcers which "are difficultly brought to cicatrize, eſpecially "when they are ſituated at the Extremity of the "large Inteſtine and about the *Pudenda*." And *l.* 5. *c.* 4. *concerning the Method of Cure*, he gives us to underſtand that it has a powerful Virtue of ſtopping Blood. "Mix two Parts of Frankincenſe "(ſays he) with one Part of Aloes, and blend them "together with the White of an Egg till they have "the Conſiſtence of Honey; then put them upon "the ſofteſt Hare's Fur, and apply them over the "open Veſſel or Ulcer." *Avicenna* approves the ſame Application to the Hemorrhoids. The Moderns likewiſe commend it no leſs as a Balſamick and Vulnerary: For it is very much uſed by the Surgeons to cleanſe Wounds, when diſpoſed to change into Ulcers. They either boil it in Wine with Birthwort, Tobacco, Myrrh, *&c.* or mix it with proper Plaiſters or Unguents; or to cleanſe ſordid Ulcers, they uſe its Tincture with Brandy, or Spirit of Wine.

Beſides the Virtues abovementioned, it is likewiſe accounted good to kill Worms, whether taken inwardly, or applied to the Navel.

Concerning the Doſe of Aloes the Ancients differ from the Moderns, at leaſt from the Phyſicians of theſe Climates. *Dioſcorides* propoſes ʒſs. or ʒj. to relax the Belly, and ʒiij. as a Purge. But at preſent this Doſe is thought too large. It is now given only from ℈j. to ℈ij. in a Bolus or Pills, being ſeldom taken diſſolved by Reaſon of its bitter nauſeous Taſte.

They

They are no leſs at Variance in Regard of the Time of uſing it. *Paulus Ægineta* aſſerts that it ought to be taken in the Morning when the Stomach is empty: "For they who give it in the "Evening (ſays he) or after Food, do Miſchief; "for it corrupts the Aliment." But at this Time Aloes is either taken faſting, and then it purges very well; or with Victuals, at the Beginning of Dinner or Supper, and then it purges ſlowly, or only relaxes the Belly.

Aloes was rarely preſcribed by the Ancients, unleſs prepared by Lotion, or Nutrition. The Lotion or Waſhing is performed thus. The Aloes reduced to a ſmooth Powder, either alone, or, as *J. Sylvius* directs, with powdered Chalk, is thrown into clear Spring-Water and ſtirred about for ſome Time with a wooden Spattle. Afterwards it is ſuffered to ſtand a Quarter of an Hour or longer to ſettle, and then the clearer Liquor which is uppermoſt is poured off into another Veſſel, and exhaled to Dryneſs by the Heat of the Sun. If the Reſidue be not ſufficiently pure and ſhining, it is powdered and waſhed again; and this Proceſs may be repeated, if we pleaſe, a third, or a fourth Time. For the Ancients believed that Aloes, after ſo many Lotions, was in a great Meaſure deprived of its cathartick Virtue and Acrimony. Nevertheleſs ſome of the Moderns have judged otherwiſe: Among whom *Etmuller* makes it to conſiſt of two Subſtances; the one mucilaginous, whereupon its purgative Virtue depends; the other reſinous, wherein is lodged its Aſtringency. Wherefore, when purging alone is required, *waſhed Aloes* (which is the Gum, or the mucilaginous Part extracted by Water) is preferable to *unwaſhed Aloes*: But when the reſinous balſamick Part is neceſſary, either to blunt the purgative Force of the other, or

to ſtrengthen the Fibres of the Stomach and Inteſtines, *&c.* then Aloes ought to be made uſe of *unwaſhed.* This is alſo confirmed by the Experiments of *M. Boulduc:* And if Aloes waſhed after the Manner of the Ancients was leſs purgative, it was perhaps owing to the alkaline Particles of the Chalk obtunding the ſaline Parts of the Juice, and rendering them inert. We ſhall therefore conclude with *M. Boulduc*, that Lotion in Water is an uſeleſs Preparation, ſince it rather increaſes, than ſoftens the cathartick Quality of the Aloes.

Nutrition, or, as ſome term it, *Inſuccation*, being preferable to the former Method, is often practiſed in the Shops. They take the pureſt Aloes reduced to Powder and diſſolve it in the Juice of Roſes, or Violets, *&c.* and then, without ſtraining, evaporate the Moiſture with the Heat of the Sun, or a gentle Fire. They repeat this a ſecond or third Time, and ſo procure what is named in the Shops *Aloe roſata*, or *violata*, that is Aloes mixed and tempered with the Extract of Roſes or Violets. This Preparation of Aloes is alſo ſometimes called *Lotion*, but improperly.

Some likewiſe require Aloes to be prepared by burning, in Order that it may ſtrengthen the Belly more, and ſtop Fluxes: But this Treatment, inſtead of meliorating the Aloes, deſtroys its Subſtance.

But to recapitulate what we have ſaid on the Virtues of Aloes. We have then concluded that it purges bilious and pituitous Humours, promotes the *Menſes* and Hemorrhoids, opens Obſtructions of the Womb, Liver, and Meſentery, corroborates the Stomach and Inteſtines, helps the Concoction of Food, raiſes the Appetite, kills Worms and expels them, and removes Putrefaction. It is proper in Diſtempers ariſing from Weakneſs and Obſtruction

of

of the Bowels, in cachectick, cold, and moiſt Conſtitutions; but is hurtful to Perſons whoſe Bowels are hot, whoſe Blood is bilious and in a State of Effervescence, to hectical and phthiſical People, and to ſuch as vomit or ſpit Blood, or are ſubject to Hemorrhages from any Part of the Body whatſoever. It is extremely noxious in acute and inflammatory Diſeaſes; and pregnant Women ought to abſtain from it. Externally it is employed to Advantage to deterge and heal ſordid Ulcers; and is likewiſe commended for Ulcers of the Eyes.

Take of choice Aloes reduced to a fine Powder ℔ſs. of the Juice of Roſes as much as will riſe four Fingers Breadth above the Powder. Stir them well together, and ſet them in the Sun, covered with a Sieve, till they are inſpiſſated to the Conſiſtence of Honey. Then pour on a freſh Quantity of Juice, and evaporate as before; and ſo repeat the ſame Proceſs nine Times. At laſt dry the Maſs to a due Conſiſtence for Pills, and keep it in a Bladder for Uſe. This we call *Aloe roſata*, or *roſated Aloes*. When it is made into Pills, we muſt obſerve that the ſmaller they are, the better they work. In the ſame Manner may be prepared the *Aloe violata*, or *violated Aloes*.

Take roſated Aloes and the Extract of Rhubarb, ā ʒj. Maſtich ℈j. Extract of Gentian and Wormwood, ā ʒſs. Mix and make Pills to relax the Belly, ſtrengthen the Stomach, and help Digeſtion. The Doſe is ʒj. before Meals.

Take hepatick Aloes and powdered Jalap, ā ℈ſs. Troches *Alhandal* gr. ij. Troches of Agarick gr. x. Oil of Aniſeed gutt. ij. Syrup of Peach-Bloſſoms q. ſ. Mix and make purging Pills, to be taken in a Morning on an empty Stomach.

Take

Take of bright Aloes gr. xv. Gamboge gr. ij. dulcified Mercury Sublimate gr. vj. Syrup of Buckthorn q. ſ. Oil of Cinnamon gutt. j. Mix and make hydragogue Pills.

Take hepatick Aloes and Scammony, ā ʒij. Maſtich and Liquorice-Juice, ā ℈ij. Oil of Cloves gutt. vj. of the ſolutive Syrup of Roſes q. ſ. to make them into a Maſs for Pills. The Doſe is ℈j. or ʒſs.

Take of bright Aloes ʒj. Myrrh ʒſs. Saffron gr. xv. Syrup of Wormwood q. ſ. Make them into Pills, which may be uſed to relax the Belly, to ſtrengthen the Stomach, and to provoke the *Menſes*. The Doſe is ʒſs.

Take Soccotrine Aloes and Gum Ammoniack, ā ʒvj. of the aperient Saffron of Iron ʒv. the Extract of the leſſer Centory ʒiv. Syrup of Wormwood q. ſ. Mix and make a Maſs of opening Pills, to be given in the Green-Sickneſs, and in Cachexies. The Doſe is ʒj. Morning and Evening.

Take of Soccotrine Aloes ʒſs. white Vitriol gr. v. the diſtilled Water of Fennel and Eyebright, ā ʒiij. Make a Collyrium ſ. a.

From Aloes are prepared a Tincture, and the *Elixir Proprietatis* of *Paracelſus*.

The Tincture is drawn by pouring upon powdered Aloes Spirit of Wine, to the Height of two or three Fingers Breadth, and digeſting them together in B. A. till the Spirit acquires an intenſe red Colour; which is then ſeparated from the *Fæces* and put by for Uſe. This Tincture has a purgative Virtue, but weaker than a Solution of Aloes in Water. It ſtrengthens the Stomach, and kills Worms. Outwardly applied it is a good Vulnerary, and removes Putrefaction.

The

The *Elixir Proprietatis* of *Paracelsus* is prepared with Spirit of Wine, thus.

Take Soccotrine Aloes, choice Myrrh and the beſt Saffron cut ſmall, ā ℥j. Spirit of Wine rectified ℥xx. Let them ſtand together in Digeſtion in B. M. or in Horſe-Dung, for fifteen Days. Afterwards decant the Liquor, and ſet it in a warm Place for a Day or two, that the *Fæces* may ſettle; and then put it by for Uſe. Some add to this Tincture ℥j. of the Spirit of Sulphur by the Bell; others, the ſame Quantity of the volatile Spirit of Sal Ammoniack, and digeſt for three Weeks longer. It is then termed *Elixir Proprietatis cum Acido*, or *Elixir Proprietatis cum Alkali*.

This Elixir gently looſens the Belly, kills Worms, provokes Sweat, corroborates the Fibres of the Stomach and Bowels, promotes the monthly Purgations, and opens the hemorrhoidal Veins. It is an excellent Preſervative in Caſes of Putrefaction, in the Scurvy, Plague, and malignant and contagious Diſtempers; eſpecially the Elixir prepared with the Acid. It is likewiſe ſerviceable in hyſterick and hypochondriack Diſorders. The Doſe, as an Alterative and Strengthener, is from gutt vj. to xx. and to promote an Evacuation, from ʒj. to ʒij. But it is to be given under the ſame Cautions as crude Aloes.

ARTIC. II. *Of* SCAMMONY.

Scammonium, *Scammonia et Scammonea*, *Off.* Σκαμμωνία, *Dioſc.* Δακρύδιον, *Trallian. et quorumd. Græcor. recentior. Diacrydium*, *Cæl. Aurelian. Scammonea et Sachmunia*, *Arab.* This is a concreted Juice conſiſting

siſting both of Gum and Reſin, but much more of the latter. In the Shops we meet with two Sorts (*viz.*) the Scammony of *Aleppo*, and that of *Smyrna*.

Aleppo Scammony is light, rare, friable, of an Aſh-Colour tending to Black; when broken, ſhining, and when rubbed to Powder by the Fingers, of a whitiſh or gray Colour. It has a bitteriſh Taſte with a certain Acrimony, and an unpleaſant Smell. It is collected about *Aleppo*.

Smyrna Scammony is more denſe and ponderous, and of a black Colour. This comes to us from *Smyrna*; but is brought thither from a Town in *Galatia* called *Cutè*, and from *Cogni* a Town in *Cappadocia* not far from Mount *Taurus*; where, as I was informed by Doctor *Sherard*, who was thirteen Years *Engliſh* Conſul at *Smyrna*, it is gathered in great Abundance.

The *Aleppo* Scammony is preferable to that of *Smyrna*. The beſt is bright, eaſily reduced to Powder, not violently acrimonious and burning when applied to the Tongue, and when mixed with Spittle, or other Liquors, grows white and milky. When it is aduſt, black, heavy, full of Stones, Sand, or other Droſs, it is unfit for Uſe.

The Plant which yields this Juice is called *Convolvulus Syriacus et Scammonea Syriaca*, *Moriſſon. Hiſt. Oxon. part.* 2. 12. It grows in *Syria*, and in great Plenty in the fat Soil about *Aleppo*.

Tournefort obſerves, that *Dioſcorides* deſcribes a *Species* of the *Convolvulus* or Scammony-Plant with a rough Leaf, wherein it chiefly differs from the abovementioned. He likewiſe tells us, that he found this rough-leaved *Convolvulus* not only in the Plains of *Myſia*, from whence *Dioſcorides* ſays the beſt Scammony in his Time was brought, but alſo about *Smyrna*, and in other Parts of the *Eaſt*. Hence he is inclined to think that the *Aleppo* Scammony is got from the *Convolvulus folio glabro, the ſmooth-leaved*

leaved Convolvulus, otherwife called *Convolvulus Syriacus*, &c. as above; and that the *Smyrna* Scammony is the Scammony of *Dioſcorides* and drawn from the *Convolvulus folio hirſuto, the rough-leaved Convolvulus*. This however he does not affirm. Upon meeting with the ingenious Botaniſt Doctor *Sherard*, and deſiring to be ſet right in this Point, he told me, that he himſelf had obſerved the rough-leaved *Convolvulus* growing about *Smyrna*, but that no Juice is drawn from it; becauſe the ſmooth-leaved *Convolvulus* is ſo common, that it yields more Juice than the Inhabitants have Occaſion for; and that therefore they draw it only from ſuch Plants as grow upon the Declivity of the Hill under the Citadel belonging to the Town. They make an Inciſion into the Root, and apply to the Wound a Shell, in which the milky Juice is received, and ſet to dry. This Scammony in Shells is pellucid, of a whitiſh or yellowiſh Colour, like Reſin or Glue; but it is ſeldom or never ſent into *Europe*; the Scammony, which comes to us in Maſſes from *Smyrna*, being brought thither, as we have before mentioned, from *Cutè* and *Cogni*; and the Merchants aſſure us, that in thoſe Places it is got from the *Convolvulus folio glabro, the ſmooth-leaved Convolvulus*.

Dioſcorides and *Meſue* have mentioned ſeveral Methods of obtaining this Juice, as well by Inciſion as Expreſſion; and it is probable that the Scammony of the Shops is now obtained both Ways, which may be the Reaſon why we find ſo much Difference in the ſame Lump.

Scammony, in a chymical *Analyſis*, affords firſt a ſmall Portion of thin Liquor, ſomewhat acrimonious, but giving no Marks either of Acid or Alkali; then a large Quantity of acid Liquor; afterwards ſome Liquor, both acid and urinous; and at

laſt

laſt a large Proportion of thick, empyreumatick Oil, with a little Earth and fixt Salt. From theſe Principles ariſes a Compound conſiſting both of Gum and Reſin; yet ſo, that from ſix Ounces of Scammony may be drawn, by Means of Spirit of Wine, five Ounces of Reſin. It diſſolves in the greateſt Part in Spirit of Wine, ſome ſaline-earthy mucilaginous Parts remaining. In watery Menſtruums it diſſolves entirely; but, from the Mixture of the reſinous Parts with the ſaline and aqueous, the Solution appears milky.

Scammony was uſed both by the *Greeks* and *Arabians*. *Meſue* reckons it ſo much ſuperior to other Evacuants, that he ſometimes calls it ſimply the *Purgative*; and *Oribaſius* regards it as the moſt violent of all purging Medicines. *Galen*, in his Book *concerning the Virtues of ſimple Medicines*, has not mentioned it, though he often ſpeaks of it elſewhere.

The Moderns in their Opinion of the Virtues of Scammony agree with the Ancients: Nor do they uſe it leſs frequently to draw forth bilious, and ſerous Humours from remote Parts. It is commended in cold and pituitous Temperaments, in intermitting Fevers, and Crudity of the Juices; more eſpecially in robuſt Bodies, of a ſettled Age: But to Children and weakly People, to Women when pregnant or brought to Bed, in ardent Fevers, and in all hot Diſeaſes and Conſtitutions, it is not accounted ſo ſafe.

Now, this Medicine ſeems to me to exert its Operation after a twofold Manner, (*viz.*) by irritating the Membranes of the Stomach and Inteſtines to Contraction, by its Parts which are more acrid and fixt, and alſo by vellicating the Nerves, by its oily Parts which are acrid and volatile, and ſo expreſſing the Juices from the Glands. As to the

the reſt, it does not diſſolve the Blood and viſcid Lymph ſo much as Manna, Jalap, and other Hydragogues; and therefore promotes not ſo large an Evacuation of thin *Serum*. This Operation of Scammony is accurately deſcribed by *Fernelius* in his *Method of Cure*, *l.* 5. *c.* 9. "It draws (ſays he) "thin yellow Bile from the whole Body, and alſo "yellow Water and ſerous Humours. And as its "Action is violent, it makes a ſudden Derivation "from the remote Parts. However, it does not "diſſolve and evacuate thick Humours, which are "accumulated about the Bowels, and, as it were, "adhere to them, whether pituitous or bilious; "but producing its Effects by a precipitate Operation, it only carries along with it ſuch Humours "as are fluid and diſpoſed to Fluxion. Theſe it "evacuates both from the *Abdomen*, as in Hydropicks, and likewiſe from the Veins, and the deepeſt Parts of the Body. And hence ſucceeds a "ſparing Diſcharge of Urine after taking it."

But as all purging Medicines are, in their own Nature, injurious to the Body, ſo Scammony being more violent than others, muſt be proportionably more injurious. And accordingly Phyſicians take Notice of many great Inconveniencies belonging to it: Among which, in Particular, they obſerve, 1. That it is a tickliſh Medicine, of a very uncertain Operation; inſomuch that a ſmall Doſe ſometimes brings on an *Hypercatharſis*, and, on the contrary, a due and ſuitable Doſe is oftimes uſeleſs and of no Effect. 2. That it produces an irritating offenſive Flatulency in the Stomach, and ſo occaſions a *Nauſea*. 3. That by its vehement Acrimony it inflames the Parts; and hence raiſes an unquenchable Thirſt, and a Fever, eſpecially in thoſe who are ſubject to Obſtructions of the Bowels, or Putrefaction of the Humours. 4. That by the ſame Acrimony

Acrimony it opens the Mouths of the Veins, and ſo excites *Hypercatharſes* or Superpurgations. 5. That it likewiſe abrades the *Mucus* of the Inteſtines, occaſioning a Dyſentery, or *Teneſmus*, and Ulcers in the other Bowels. 6. That it is offenſive to the principal Parts, by a Kind of Malignity, being extremely noxious to the Heart, Sotmach, Liver, *&c.*

However, by ſome Precautions theſe Inconveniencies may poſſibly be prevented, as, 1. By giving it opportunely, that is, either immediately in the Beginning of the Diſeaſe when the Matter is turgid, or otherwiſe when the Humours are concocted and become fluid. 2. By ordering it in a proper Doſe. 3. By duly preparing it.

With Reſpect to the Doſe of this Medicine Authors are not agreed. The ancient *Greeks* never ventured upon Catharticks without the greateſt Prudence and Deliberation, but always gave them in large Quantities: Whereas we, who in the Uſe of theſe Medicines are become bolder, are more timorous in Regard of their Doſes. This, perhaps, is the Reaſon why we reap not the ſame Benefit from them: Though it muſt be confeſſed that our Bodies in this Climate are of a looſer Texture, and more eaſy to purge than the robuſt Bodies of the *Greeks*, and the Inhabitants of other hot Climates, who were inured to Exerciſe and Labour. *Dioſcorides*, therefore, to purge Bile and Phlegm, directs it to be taken in Mulſe to ʒj. *Paulus Ægineta* and *Aëtius* gave it to ℈ij. and *Meſue* only from gr. v. to xij. or xv. *Bodæus a Stapel* tells us, that he has often given it with good Succeſs to gr. xx. or xxv. mixed with Syrup of Violets; to Children of eight, ten, or twelve Years of Age, to gr. xij. or xv. and to thoſe of five, to gr. vj. or vij. *Wedelius* makes this Diſtinction. "It is given (ſays he) either as "the Baſis or principal Ingredient, or as a *Stimu-*

"*lus*

" *lus* or Auxiliary. As a *Stimulus* it is given to " gr. ij. or iij. and as the *Baſis* to gr. xv. or ℈j." Laſtly, *Fallopius* puts an End to all Diſpute about the Doſe. " I adviſe (ſays he) always to adminiſter " it in a ſmall Quantity, to ſerve only as a Spur." By a *Spur* he means a few Grains added to other Purgatives, for Peaſants, and others of athletick Conſtitutions. As for myſelf, I preſcribe the beſt Scammony, carefully powdered, from gr. ij. or iij. to gr. x. or xij. at moſt; though very ſeldom, and never without ſome Solicitude concerning its Operation, which is always uncertain. For when the Coats of the Stomach and Inteſtines are covered with a feculent tenacious *Mucus*, then the Medicine, being involved in this *Mucus*, paſſes through the Belly without Action. But, on the other Hand, when their Coats are almoſt deſtitute of *Mucus*, it lodges within the Foldings of the Stomach, or Cells of the Inteſtines, and adhering to them by Means of its reſinous Parts, irritates, inflames, and ulcerates the Membranes; and hence a ſmall Doſe is ſucceeded by a Superpurgation, a Dyſentery, or *Teneſmus*.

Since Scammony, as we have ſaid, is a Subſtance compounded of both Gum and Reſin, but ſo that the Reſin greatly predominates, therefore, though it diſſolves in Water, the Solution is not perfect, becauſe the reſinous Part gradually ſeparates into Grumes, and ſubſides. For this Reaſon it cannot be ſafely drank diſſolved in aqueous Liquors. Wherefore it is uſually taken in the Form of a Bolus or Pills, and ſeldom in Potions; in which it is not given, unleſs divided by Spirits, Oils, or Salts.

To temper the Acrimony of this Drug, and to ſubdue its other Faults, many Corrections and Preparations have been contrived.

The firſt Method of preparing it uſed by the Ancients is deſcribed by *Galen* thus, *l.* 1. *concerning the Qualities of Aliments.* They ſcooped out the Seeds and ſome of the Pulp of a Quince, and filling the Cavity with Scammony, covered it with Paſte made of Meal and Water, and roaſted it: Then they gave the Quince to be eaten together with the Scammony. At preſent the Pulp is commonly thrown away, and the Scammony retained. Others retain the Pulp, and reject the Scammony: And others, with *Galen*, retain both.

In what Manner ſoever this Medicine is prepared, it is now called in the Shops *Diacrydium*, *Diagrydium*, and *Diadagrydium*, to diſtinguiſh it from crude Scammony. The Preparation abovementioned is termed *Diagrydium Cydoniatum.*

The Ancients likewiſe tempered it with the Cream of their Ptiſan, as may be ſeen in *Galen* in the Place above quoted. *Meſue* bakes it under Gledes, or in an Oven, with the Seeds of Daucus, of Fennel, and with Galangal. *Valerius Cordus* macerates it in Oil of Violets by Infuſion; then roaſts it in a Quince covered with Paſte; and laſtly, pouring upon it the Juice of Quinces in which Myrobalans have been infuſed, ſets it in a warm Place to dry. Again, ſome only mix it with the expreſſed Juice of Quinces, and gradually evaporate it.

The Moderns have attempted to correct its malignant Quality with the Juice of Liquorice, or with Sulphur: Whence it is named *Diagrydium glycyrrhizatum*, or *Sulphuratum.* The firſt is prepared by boiling a ſufficient Quantity of Liquorice in common Water, which they ſtrain and evaporate to the Thickneſs of a Syrup. Then they add q. ſ. of choice Scammony, reduced to a fine Powder, and placing the Mixture in B. M. ſtir it about continually, till it acquires the Conſiſtence of an Extract.

The latter is made thus. They ſpread ſome bruiſed Scammony upon Paper, and hold it in the Fume of Sulphur thrown upon burning Coals, ſtirring it about continually with a Spattle, till it ſeems to melt. The longer the Scammony is held to take in the Fume of the Sulphur, the better it is ſuppoſed to be prepared.

This ſulphurated *Diagrydium* is the *Baſis* of a famous Medicine of the Shops, called *Pulvis de tribus* from the Number of its Ingredients; and *Pulvis Comitis Varvicenſis* from an illuſtrious *Engliſhman*, *Robert Dudley*, Earl of *Warwick*, who was the Author of it. It is likewiſe called *Pulvis Cornachini*, becauſe of the extraordinary Commendations beſtowed upon it by *Marcus Cornachini*, Profeſſor of Phyſick at *Piſa*, in a Treatiſe intitled *Methodus quâ omnes humani Corporis Affectiones ab Humoribus copiâ vel qualitate peccantibus genitæ, tutò, citò et jucundè curantur.* It is compounded of ſulphurated Scammony, diaphoretick Antimony, and Cream of Tartar: But their Proportions are varied in this Author, with Regard to the peccant Humours. For he preſcribes the Diagrydium from gr. vj. to xxij. the diaphoretick Antimony from gr. iv. to xx. and the Cream of Tartar from gr. ij. to vj. But at preſent this Powder is kept in the Shops, by the Apothecaries of *Paris*, prepared with equal Parts of Diagrydium, diaphoretick Antimony and Cream of Tartar: And thus it may be ſuited with greater Eaſe and Safety to different Ages and Conſtitutions, by knowing how much Scammony is contained in each Doſe of the Powder. It is preſcribed from gr. vj. to ix. for ſucking Children; and to ℈j. or ʒſs. for Adults. *Cornachini* extols it as a *Panacea* for curing or preventing all Diſeaſes incident to the human Body. He commends it, in particular, in intermitting, putrid, and acute Fevers, in

Deliriouſneſs without a Fever, in the *cholera Morbus*, Dropſy, and Pleuriſy, in Looſeneſſes, Dyſenteries, the Gout, and Small-Pox, and againſt Worms. But nothing is ſo excellent, but that too free an Uſe of it may be hurtful; and this Medicine requires the ſame Cautions in its Adminiſtration, with Scammony, and other Catharticks: Yet we muſt acknowledge, that when thus prepared it is leſs obnoxious to the Inconveniencies abovementioned, may be preſcribed by the Phyſician more ſafely, and be taken by the Patient without Diſguſt.

We are obliged to the Chymiſts for a Tincture of this Drug, and a reſinous Extract, improperly called its *Magiſtery*. The Tincture is made by diſſolving Scammony in Spirit of Wine, and ſeparating the clear Liquor from the *Fæces*. The Extract is made by evaporating the Tincture to Half, and pouring Water to it, by which Means the Spirit, which before kept the Reſin ſuſpended, forſakes it, and the reſinous Particles fall to the Bottom under the Appearance of Turpentine. The Sediment, after many Ablutions in Water, is at laſt dried in the Heat of the Sun. But this Reſin purges leſs than Scammony in the ſame Doſe, yet irritates the Inteſtines more violently, and often inflames them: Which we have before obſerved of the Reſins of ſome other Catharticks.

Moreover, others try to correct Scammony with acid Liquors. They either diſſolve it in Citron-Juice, then ſtrain the Solution, and evaporate to the Conſiſtence of an Extract; or they moiſten the Powder with Spirit of Sulphur or Vitriol, and dry it. But theſe Corrections in ſome Meaſure deſtroy its Subſtance, and therefore leſſen its Efficacy: So that it is better to mix it with ſome Powders, as in the *Pulvis Cornachini*.

But a much more commendable Method of correcting Scammony is obſerved in many pharmaceutical Compoſitions, wherein it is extended and ſoftened by the Juices of Plants, the Pulps of Fruits, and the oily Parts of odoriferous Seeds, and Aromaticks; ſuch are purging Electuaries, and Pills. In theſe Scammony is employed, either as the *Baſis*, or as a *Stimulus* to the other Ingredients. Nevertheleſs we muſt take Notice that in Pills it is not quite ſo ſafe, ſince in them its reſinous Parts cannot be ſufficiently extended; and on this Account it ought only to be uſed in that Form as a *Stimulus*.

Laſtly, I ſhall here add the Judgment which the learned *Hecquet* has given of this Drug, in his *Treatiſe on Purgatives*, (*viz.*) That there is no Kind of Medicine which requires more Prudence in the Phyſician, a more convenient Time with Reſpect to the Patient, or more Obſervance of Rule in both.

It was uſed by the Ancients externally in Liniments and Unguents againſt the Scab, and cold Affections of the Head, to reſolve hard, or ſcirrhous Swellings, to remove ſciatick Pains, *&c.* and was applied upon Wool to draw down the *Menſes*. At this Time it is ſcarce ever uſed but as a Purge.

Take of choice Scammony reduced to an impalpable Powder gr. viij. of the Yolk of an Egg ʒij. rub them in a marble Mortar with a wooden Peſtle, till the Scammony ſeems diſſolved; then add of the Syrup of Maiden-Hair ℥j. When theſe are perfectly mixed, make them into a Potion by gradually pouring upon them ʒvj. of Barley-Water, and a few Drops of the diſtilled Water of Orange-Flowers. This Medicine is not unpleaſant.

Take of choice Scammony powdered gr. xv. Sweet Almonds blanched ʒiv. beat them into

a fine Pulp, pouring upon them by little and little ʒxij. of Barley-Water. Strain with a ſtrong Expreſſion, and in the Liquor diſſolve of the Syrup of Violets, or of Maiden-Hair, ʒiſs. Cinnamon-Water ʒſs. Make a Purging Emulſion for two Doſes.

Take of Diagrydium prepared with Liquorice gr. vj. white Sugar ʒj. ſoluble Tartar ʒij. Let them be rubbed together and perfectly mixed; then add ℔j. of common Water, the Juice of two Citrons, and gutt. x. of Orange-Flower Water. This Mixture may be drank by Glaſsfuls on an empty Stomach.

Take of Scammony in Powder ʒv. Spirit of Wine ℥j. ſet them in Digeſtion for nine Days, and filtre the Spirit through Paper: Then diſtil it to Half; and whilſt it is warm, diſſolve in it ℔ſs. of white Sugar, to make a Syrup; to which add a few Drops of the Oil of Cinnamon. The Doſe is from ʒſs. to ʒj. in any proper Liquor.

Take of Scammony ℈iv. Cinnamon ʒij. Cloves ʒſs. rectified Spirit of Wine ℔j. Let them digeſt together for nine Days, now and then ſhaking the Veſſel. To the Liquor poured off clear, add ℔j. of the Syrup of Quinces, and keep the Mixture for Uſe. The Doſe is from ʒſs. to ʒiij.

Take of Diagrydium prepared with Liquorice gr. vj. Rhubarb powdered ℈j. Quince-Marmalade q. ſ. Mix them into a Bolus.

Take of Diagrydium with Liquorice gr. vj. Powder of Jalap gr. xv. dulcified Mercury Sublimate gr. x. Pulp of Caſſia freſh drawn ʒij. Mix and make a Bolus.

Take powdered Sena, Rhubarb and Cream of Tartar, ā gr. xv. Diagrydium gr. iij. Conſerve of Roſes q. ſ. for a Bolus.

Take

Take ſulphurated Diagrydium and diaphoretick Mineral, ā ℈ſs. the aperient Saffron of Iron and Cinnamon, ā ʒij. of Gum Ammoniack ℈j. Syrup of Wormwood q. ſ. Make a Maſs for Pills. The Doſe is from gr. vj. to ℈j. in a Cachexy, and Obſtructions of the Meſentery.

Take of Diagrydium prepared with a Quince ʒj. bright Aloes ʒiij. Troches *Alhandal* ʒij. Maſtich and Mace, ā ʒj. Saffron ʒſs. Syrup of Peach-Bloſſoms q. ſ. to make Pills. The Doſe is from gr. x. to ℈j.

Take of Diagrydium prepared with a Quince and dulcified Mercury Sublimate, ā ℈j. the Extracts of Fumitory and Gentian, ā ʒj. Mix and make Pills. The Doſe is from ʒſs. to ℈ij.

ARTIC. III. *Of* GAMBOGE.

Gummi Gutta, *Gummi Guttæ*, *Gummi Gamandræ*, *Gummi de Gamandrâ*, *Cambodium*, *Cambogium*, *Gambogia*, *&c. Off.* Gamboge is a concreted Juice, compounded of Gum and Reſin, inflammable, dry, denſe, hard, ſhining, opake, of a yellowiſh Saffron-Colour, without Smell, and almoſt void of Taſte; at leaſt, when held in the Mouth it taſtes only at firſt like Gum Arabick, but ſoon after it impreſſes a gentle Acrimony, and leaves behind it a certain Dryneſs. It comes to us in Cakes, or Rolls, from ſeveral eaſtern Countries, and alſo from ſome Provinces of *America*.

It was not known in *Europe* before the Year 1603, at which Time it was ſent to *Cluſius*, and afterwards by Degrees came into Uſe; though much more among Painters than Phyſicians. The beſt is pure, free from Sand, and other Droſs, of a yellowiſh red or yellowiſh Saffron-Colour, readily takes Fire, and gives to Water, or the Spittle, a yellow Colour, or a Colour like Brimſtone.

Authors were a long Time uncertain concerning the Origin of this Juice, and have formed very different Conjectures about it. To omit the reſt, *Bontius* in particular, *De Medicinâ Indorum*, *c.* 9. ſays it is the Juice of a *Species* of the *Tithymalus* or *Eſula Indica*; and this Opinion has moſtly prevailed. But herein *Bontius* ſeems to have been miſled by depending too much upon the Veracity of others, having never himſelf ſeen the Plant from which Gamboge is obtained; ſince we are now ſufficiently aſſured that it is drawn from two large Trees, which are different *Species* of the *Carcapulli*.

The firſt is the *Carcapulli*, *Acoſtæ Hiſtor. Aromat. cap.* 46. *Coddam-Pulli*, *Hort. Malabar. T.* 1. 41. *Ghoraka Cingalenſibus dicta*, *Herman. not. ad Hort. Malabar.* The other is the *Carcapulli*, *Linſchot: Carcapulli*, *de Bry: Kanna-Ghoraka*, *id eſt Ghoraka dulcis Cingalenſibus*, *Herman. not. ad Hort. Malabar.* Both theſe Trees *Caſpar Bauhine* in his *Pinax* erroneouſly includes under one *Species*; for they differ not only in the Flower, but alſo in the Fruit, which in the firſt is as large as an Orange, and in the laſt no bigger than a Cherry, and of a much ſweeter Taſte. They grow in *Cambaïa*, *China*, *Malabar*, and the Iſland of *Ceylon*.

Paul Herman, who ſaw the Gamboge procured from theſe Trees, ſays it flows from Inciſions made in their Trunks, in the Form of a yellowiſh and ſomewhat milky Juice, which being inſpiſſated by the Heat of the Sun to a due Conſiſtence, is moulded by the Hands into large round Cakes, or cylindrical Rolls, and then is laid to dry. The Juice of the *Kanna-Ghoraka* or the *Carcapulli* with a ſmall ſweet Fruit is preferable to that of the other Tree, becauſe it is milder.

Mr. Richer obſerved a Tree yielding Gamboge in ſome Parts of *America*, particularly in the Iſland of *Cayenne*, which he tells us is as big as an Oak-Tree.

Tree. Whether this be the ſame with either of thoſe aforementioned, or of a diſtinct *Species*, I know not.

The *Indians* make uſe of Gamboge, diſſolved in Linſeed-Oil, as a Pigment, and when they are troubled with Coſtiveneſs of the Belly, they drink it together with the Oil, but never employ it otherwiſe as a Medicine. The Fruit of the *Coddam-pulli*, which has an acid ſweet Taſte, is carried dry out of *Malabar* into other Provinces. The Inhabitants uſe it in Food, and highly commend its medicinal Virtues. Among other good Qualities which Experience has diſcovered to belong to it, they find it peculiarly efficacious for ſtopping all Kinds of the *Fluor Albus*, eſpecially when the Diſorder has been contracted by too much Venery. That the Fruit ſhould thus poſſeſs an aſtringent Virtue, and the Juice of the ſame Tree be violently cathartick, is indeed wonderful.

In a chymical *Analyſis*, two Pounds of Gamboge yielded two Ounces and two Drachms of Liquor, which was ſomewhat turbid, ſubacid, and auſtere, and likewiſe in Taſte and Smell had ſome Reſemblance of bitter Almonds; three Ounces, one Drachm, and eighteen Grains of reddiſh Liquor, which was acid, auſtere, and pungent upon the Tongue; two Ounces, three Drachms, and ſix Grains of brown Liquor, both acid and urinous; four Ounces, two Drachms, and ſixty Grains of tranſparent, fluid, brown Oil; one Ounce and four Drachms of thicker Oil, heavier than Water. The black, rare, and ſpongious Maſs remaining in the Retort weighed nine Ounces and ſix Drachms; which being calcined in a Crucible for thirty eight Hours left one Ounce, five Drachms, and twenty four Grains of gray Aſhes; from which were extracted, by Lixiviation, twenty four Grains of fixt neutral Salt. The Loſs of Parts in Diſtillation was ſix Ounces, four Drachms, and ſixty Grains; and in Calcination eight Ounces and forty eight Grains.

Gamboge

Gamboge readily takes Fire, and burns in a bright Flame, like a Reſin, at the ſame Time emitting a copious Smoke. It diſſolves in Spirit of Wine, but not entirely; for about a ſixth Part remains undiſſolved, to wit, the Gum, which is eaſily ſoluble in hot Water, or in Oil of Tartar. It likewiſe diſſolves in aqueous Menſtruums into a whitiſh or yellowiſh Milk, but not perfectly; becauſe the reſinous Particles gradually concrete and fall to the Bottom of the Veſſel, leaving the Water limpid. Whence it appears, that this Juice is a ſaline ſulphureous, or reſinous and gummous Concrete, conſiſting of a thin Sulphur, which communicates the Bitterneſs and Smell to the Phlegm ariſing firſt in Diſtillation; of a thick Sulphur, which is not raiſed and ſeparated from the Earth, but by a ſtrong open Fire; and of a tartarous Salt ſomewhat ammoniacal, which by the Means of Diſtillation is reſolved partly into an acid, and partly into an urinous Salt. The aqueous Solution of Gamboge, by pouring to it Oil of Tartar *per deliquium*, or Lime-Water, acquires a red Colour like Blood, by Reaſon that the ſulphureous Parts are expanded, as may be ſeen in a Diſſolution of common Brimſtone by a ſtrong alkaline *Lixivium*.

I am of Opinion, that the purgative Virtue of this Drug is owing to its thinner ſulphureous Subſtance, mixed in a certain Proportion with volatile Salts; foraſmuch as theſe ſaline ſulphureous Particles, being by the gaſtrick Juice ſet at Liberty and ſeparated from the groſſer and fixt Principles, vellicate the Membranes of the Stomach and Inteſtines, enter the Pores of the Nerves, and irritate them: Whence a Nauſea, Vomiting, and Purging.

Some have ſuppoſed this Juice to contain a large Quantity of alkaline Salt, becauſe the Solution of it

it in Water mixed with Syrup of Violets takes a green Colour. But this Colour does not arise from the alkaline Salt contained in it, but from the Mixture of the yellow and the blue *Moleculæ:* Which Painters daily experience, by mixing yellow Powders with blue, and Philosopers, by joining yellow and blue Glasses.

Gamboge is reckoned among the stronger hydragogue Catharticks. It evacuates particularly serous and thin bilious Humours, both upwards and downwards, suddenly, exerting its Operation almost as soon as taken, and without Uneasiness or Griping. On this Account it is frequently used in the Dropsy, Cachexy, Coughs, Difficulty of Breathing, Asthma, Jaundice, Catarrhs, Gout, Scab, and other Distempers of the like Nature.

Some Physicians were at first afraid of using this Medicine, by Reason of its Violence. Of this Number was *Horstius*, who in his Epistles, *Sect.* 9. says he thought it safer to abstain from it, lest he should make Experiments at the Cost of other Men's Torments: Yet afterwards, when he was appointed first Physician at *Ulm*, he began to have a more favourable Opinion of it, retracting in a great Measure what he had said before. Others have experienced its Use so successful, that they have not stuck to administer it freely, even to Children, to old, and consumptive People, and to pregnant Women: Among these was *Hechstetterus*, a Physician of *Augspurg*, who in the Space of nine Years prescribed to his Patients many Pounds of it. Indeed they who know how to give this Medicine under proper Cautions, and to time it well, find these Conveniences in it, that it has no Smell and but little Taste; that it may be taken in a small Dose, and performs its Operation speedily; that it powerfully dissolves viscid tenacious Humours in what Part of the

the Body ſoever they ſtagnate; and expels ſuch as are in the Stomach by Vomit, and the others plentifully by Stool.

The Doſes of this Drug propoſed by Authors are different. The *Americans*, according to *Morardus*, put an entire Piece of it, of the Bigneſs of a Walnut, or about ʒij. into ℥ij. of ſome watery Liquor, and letting them ſtand together all Night in Maceration, ſtrain off the Liquor in the Morning, and drink it. The Piece, it is true, is not entirely diſſolved, yet this Doſe would be too ſtrong for us. The Conſtitutions of Men differ from one another, as Climates differ from Climates. The *Americans*, from the Robuſtneſs of their Conſtitutions, are more difficultly wrought upon by Catharticks. In theſe Climates Gamboge is preſcribed from gr ij. or vij. to gr. xv. at moſt, though *Cluſius* extends the Doſe to gr. xx. I have often given it from gr. ij. to iv. without occaſioning any Vomiting. In ſome of my Patients gr. iv. have diſordered the Stomach, though in few; and theſe repeating the ſame Doſe for many Days, never vomited after the firſt or ſecond Time of taking it. From gr. v. to viij. or x. it purges both upwards and downwards, copiouſly and gently, without any Violence; and when given in this Doſe it wants no Corrector, eſpecially if diluted and extended with a large Proportion of Liquor. If taken in the Form of a Bolus or Pills it is more apt to prove emetick, though ſeldom if joined with *Mercurius dulcis*.

However, as this Drug is liable to ſome Inconveniencies in its Effects in common with other ſtrong Catharticks, to wit, to a Subverſion of the Stomach, to Vomiting, and to a Superpurgation, the ſame Cautions ought to be obſerved in giving it, as in the Adminiſtration of other Catharticks and Emeticks.

Hechſtetterus,

Hechſtetterus, to hinder it from proving emetick, and to render it more agreeable to the Stomach, adds to it Birch-Water with a few Drops of the Spirit of Vitriol: Others try to correct it with the Spirit of Vitriol alone; with Citron or Quince-Juice, the Fume of Brimſtone, the Oil of Cinnamon, of Mace, *&c.* with Cinnamon-Water, or with Syrups and Salts. But theſe Corrections are ineffectual for preventing the Matter lodged in the Stomach from being thrown up. Beſides, as I have already ſaid, it wants no Corrector, provided that it be given in a due Doſe, and ſufficiently diluted. They who are naturally difficult and unaccuſtomed to Vomit, ought to abſtain from its Uſe.

The Chymiſts procure from it a Reſin and Magiſtery; but theſe elaborate Preparations are quite uſeleſs, for Reaſons which I have before given in treating of other Purgatives.

Hechſtetterus hath moreover obſerved that this Drug operates more by itſelf, than when mixed with other purging Medicines; and that it works but little in Pills, and very plentifully in Infuſion.

Take of Gamboge gr. vij. diſſolve them in ℥xij. of a Decoction of Barley, and by adding ℥ij. of the Syrup of Violets, make a green Potion, to be divided into two Doſes, and taken in an *Anaſarca*, and Congeſtion of ſerous Humours.

Take of Gamboge gr. vj. common Water ℥vj. white Sugar ℥ſs. and the expreſſed Juice of a Citron. Mix ſ. a. and make an hydragogue Potion.

Take of *Calabrian* Manna ℥iſs. the diſtilled Water of Dwarf-Elder ℥vj. in the ſtrained Solution diſſolve gr. iv. of Gamboge, and add ℥ſs. of Cinnamon Water, for a Potion.

Take

Take of *Calabrian* Manna ʒiſs. Gamboge gr. vj. diſſolve them in ʒvi. of Endive-Water; then adding of Spirit of Vitriol gutt. iij. and Citron-Water ʒſs. make a Potion.

Take of Gamboge gr. iv. Barley-Water, and the diſtilled Water of Orange-Flowers, ā ʒiij. white Sugar ʒſs. Mix and make a Draught.

Take of Gamboge gr. vij. *Mercurius dulcis* gr. x. Conſerve of Roſes q. ſ. Mix and make a Bolus to be given in the Scab, and cutaneous Affections.

Take of Gamboge gr. vi. the *Elæoſaccharum* with the Oil of Cinnamon ʒij. Make a Powder.

Take of Gamboge gr. x. Oil of Juniper gutt. ij. Mithridate q. ſ. to make Pills.

Take of powdered Jalap gr. xij. Gamboge gr. iv. Cream of Tartar ʒſs. Syrup of Buckthorn q. ſ. Mix and make them into a Bolus.

ARTIC. IV. *Of* OPIUM.

Opium et Meconium, *Off.* Ὄπιον *et* Μηκώνειον, *Græc.* *Affion et Amſion*, *Arab.* Opium is a concreted Juice, both reſinous and gummous, heavy, denſe, ſoftiſh, inflammable, of a reddiſh brown Colour, with a Caſt of Black, of a ſtrong, ſoporiferous Smell, and a bitter, acrid Taſte. It comes to us from *Natolia*, *Egypt*, and the *Eaſt Indies*, in roundiſh flat Cakes, about an Inch thick, weighing from half a Pound to a Pound, and covered with Poppy-Leaves.

The *Arabians* and the Shops have commended the *Thebaick* Opium, or that which was gathered about *Thebes* in *Egypt*, before what was got in other Places: But at this Time it is no longer diſtinguiſhed. From what Place ſoever Opium comes to us, it is accounted good when it is pure, ſoftiſh, growing pliable betwixt the Fingers, inflammable,

of

of a brown Colour or inclining to Black, and of a ſtrong, viroſe, ſtupefactive Smell. When it is dry and friable, or ſcorched, mixed with Sand, Gravel, or other Impurities, it is bad.

The Ancients diſtinguiſhed two Sorts of Poppy-Juice. One was the Tear which iſſued from the wounded Heads of the cultivated Poppy, and was called Μηκώνος ὄπος, and by the Phyſicians Ὄπιον. The other, termed Μηκώνειον or Μηκώνιον, was the inſpiſſated Juice of the whole Plant extracted by bruiſing it. They reckoned *Meconium* much more inert than *Opium*. But at preſent we have only one Sort brought to us, under the Name of *Opium*, namely, the Juice which flows from Inciſions in the Heads of the white Poppy; nor is any other Sort to be met with among the *Turks*, and Inhabitants of *Conſtantinople*, beſides that which is brought to us in Cakes: Though the *Perſians* diſtinguiſh the Juice iſſuing from the Heads into three Sorts, eſteeming that which is firſt procured from them the beſt, as we ſhall mention below.

The Poppy from which this Juice is drawn is called *Papaver hortenſe ſemine albo*, *Sativum Dioſcoridi*, *album Plinio*, C. B. P. 170. In many Provinces of the *Leſſer Aſia* it is ſown in the Fields, as Wheat is here. When the Heads of the Plant are formed, ſome ſlight Inciſions are made into them, and a milky Juice iſſues from the Wounds in Drops, which is left to thicken in the Sun, and then gathered. *Tournefort* ſays that the greater Quantity of Opium is extracted from the Heads by Contuſion and Expreſſion: But both *Bellonius* and *Kæmpfer* are ſilent upon this Method of procuring it.

In *Perſia* Opium is gathered in the Beginning of Summer, when the Heads are come near to Maturity, by wounding them Croſs-wiſe. The Knife which ſerves for this Buſineſs, having five Edges, makes

makes five parallel Wounds at once. The Juice flowing from theſe, is the next Day ſcraped off with a Spattle, and put into a ſmall Veſſel hung to the Waſte. Then the other Side of the Heads are wounded to obtain the Juice, in the ſame Manner. The Juice of the firſt Gathering, called *Gobaar*, is accounted preferable, as it poſſeſſes a greater Virtue of appeaſing the Brain. The Colour of it is white, or pale approaching to yellow, but being rendered drier by a longer Inſolation it becomes brown. The Juice of the ſecond Gathering, which is inferior as well in Price as in Virtue, has commonly an obſcure or dark red Colour. Some make a third Inciſion, whereby they obtain a Juice of a very black Colour and little Virtue.

The Opium, when got together, is prepared, by moiſtening it with a little Water or Honey, and continually and ſtrongly rubbing it about in a flat wooden Diſh, with a thick wooden Spattle, till it acquires the Conſiſtence, Tenacity and Brightneſs of a well elaborated Pitch. Afterwards it is moulded by the Hands into ſhort Rolls, which, when expoſed to Sale, are cut into Pieces for the Buyers with Shears.

Having been thus treated, the *Perſians* call it *Theriaack malideh*, that is, *Treacle prepared by grinding*, or *Theriaack afiuun*, that is, *opiate Treacle*, to diſtinguiſh it from the *Treacle of Andromachus*, which they term *Theriaack faruuk*. For with theſe People Opium paſſes for the γαλήνη, ἱλάρη and εὐδία of the Poets, (*viz.*) a Medicine producing *Tranquillity*, *Cheerfulneſs* and *Serenity*; which three Elogiums, we read, were formerly beſtowed upon the theriacal Antidote of *Andromachus*.

The preparing of Opium as above deſcribed is uſually performed by certain Huckſters, who ſitting in the Market-Places and publick Streets are perpetually working their Arms about at this Employment.

But

But this is not the only Method of preparing Opium. It is oftentimes mixed, not with Water, but with Honey alone, in ſo large a Proportion, as not only to keep it moiſt, but alſo to qualify its Bitterneſs. And this in particular is called *Bæhrs*.

The moſt remarkable Preparation conſiſts of Nutmeg, Cardamom, Cinnamon, and Mace, reduced to a fine Powder and mixed with Opium. This is believed to be highly beneficial to the Heart and Brain. It is called *Polonia*, or, as others pronounce it, *Pholonia*, to wit, the *Philonium* of *Perſia* or of *Meſue*. Some, omitting the Spices, make it into a Maſs with Saffron and Ambergreaſe. Many prepare it, according to their own Fancies, at Home, for the Uſe of their Families.

Beſides theſe Preparations, which are taken in the Form of Pills, *Kæmpfer* makes Mention of a Liquor, very famous among the *Perſians*, called *Coconar*, which they drink in conſiderable Quantities.

Some prepare this Liquor by boiling Poppy-Leaves a ſhort Time in Water; others, by infuſing the bruiſed Heads in Water, or by laying them in a Strainer, and pouring and returning the Water upon them ſeven or eight Times, which they afterwards make agreeable to their own Taſtes, by mixing with it ſeveral Things, at Pleaſure.

Kæmpfer likewiſe adds a third Kind of Opiate, which he names *Electuarium lætificans* and *lætificando inebrians*, from its occaſioning a mirthful Drunkenneſs. This Electuary, whereof the Baſis is Opium, is variouſly compounded by the Phyſicians and trading People, different Ingredients being added to ſtrengthen and exhilarate the Spirits. Wherefore there are many different Deſcriptions of it extant; but one in particular, for which we are indebted to *Haſſem-begi*, is the chief and moſt celebrated; be-

cauſe it is ſaid to excite in the Mind of the Perſon who eats it a wonderful Joy and Gladneſs, and to fill the Brain with delightful, and tranſporting Ideas.

Some moreover pickle the tender Heads of the Poppy with Vinegar, and uſe them in ſecond Courſes at Table.

In a chymical *Analyſis* of the white Poppy, five Pounds of the green Leaves with the Stalks yielded firſt one Pound, ſix Ounces, ſix Drachms and three Grains of tranſparent, yellowiſh, ſubacid Phlegm, of an ungrateful Taſte, and a viroſe, narcotick Smell, like that of the Leaves when bruiſed; afterwards, two Pounds, fifteen Ounces and one Drachm of tranſparent, reddiſh Liquor, intenſely acid, auſtere, and of an empyreumatick Scent; one Ounce, one Drachm and fifty four Grains of a dark brown Liquor, alkaline urinous, with a little volatile Salt; and laſtly, one Ounce, two Drachms and ſixty ſix Grains of thick Oil. The black Maſs remaining in the Retort weighed four Ounces and three Drachms: Which being calcined in a reverberatory Fire left one Ounce, three Drachms and forty eight Grains of Aſhes; from which were extracted, by Lixiviation, four Drachms and ſixty Grains of fixt Salt merely alkaline. The Loſs of Parts in Diſtillation was three Ounces, one Drachm and twenty one Grains; in Calcination, two Ounces, ſeven Drachms and twenty four Grains.

From two Pounds, fifteen Ounces, of the Heads of the white Poppy, freſh and not quite ripe, were firſt obtained eleven Ounces, ſeven Drachms, and forty two Grains of limpid ſubacid Phlegm of an ungrateful Taſte, and a viroſe Smell, like that of the Leaves of the Plant when bruiſed; then, one Pound, thirteen Ounces, one Drachm, and eleven Grains of Liquor, which at firſt was limpid, but

towards the End reddiſh, of an acid, auſtere Taſte, and an empyreumatick Scent; and laſtly, three Drachms and twenty four Grains of dark reddiſh, or brown, alkaline urinous Liquor, with a little urinous Salt. The black Maſs remaining in the Retort weighed two Ounces, thirty ſix Grains; which being calcined in a reverberatory Fire left three Drachms and fifty one Grains of Aſhes; from which were extracted, by Lixiviation, one Drachm and eighteen Grains of fixt Salt merely alkaline. The Loſs in Diſtillation was four Ounces, ſix Drachms and ſeven Grains; and in Calcination, one Ounce, four Drachms and fifty ſeven Grains *.

From theſe *Analyſes* it is evident, that theſe Parts of the Poppy conſiſt of a tartarous and ammoniacal Salt united, and a very thick Oil; and that in the Heads is contained a larger Quantity of Earth, than in the Leaves and Stalks.

Two Pounds of pure Opium, by a chymical Treatment, afforded twelve Ounces, two Drachms of Liquor, both acid and urinous; and two Ounces and three Drachms of thick Oil. The *Caput mortuum* remaining in the Retort weighed fifteen Ounces and four Drachms. This being calcined in a reverberatory Fire left two Ounces and ſixty Grains of Aſhes; from which were drawn, by Lixiviation, four Drachms and forty five Grains of fixt Salt merely alkaline. The Loſs in Diſtillation was one

* It appears, upon Calculation, that my Author has made a Miſtake in ſetting down ſome of the Quantities abovementioned; and beſides, from what follows, we may conclude that he has forgot to inſert the thick Oil, which here deſerves our particular Notice. The Reader may perhaps find a few Overſights of the ſame Nature in other Places, but as they are not very material, and it would be impoſſible to rectify them, I have not thought it worth while to take upon me the Trouble of pointing them out.

Ounce and ſeven Drachms; and in Calcination, thirteen Ounces, three Drachms and twelve Grains.

There is, therefore, a larger Proportion of volatile urinous Salt in Opium, than in the Leaves of the Poppy, or the Heads. But not only an alkaline urinous Salt is found in Opium, as *Pitcairn* imagined, but likewiſe an acid Salt, and even a powerful one: Which is proved both by its *Analyſis*, and alſo by pouring its Solution to the Tincture of Turnſole; for it changes the Colour of this Tincture into a fiery red.

From the acid and the alkaline Salt, in Combination with the Oil, ariſes a reſinous and gummous Compound, which is inflammable in the Fire, whereof the greater Part diſſolves in Water, and a moderate Portion in Spirit of Wine. The thick Sulphur, contained in Opium, is capable of the greateſt Rarefaction, as is apparent from the ſtrong Smell of Opium diſperſed in the Diſtillations: And to this condenſated, and rarefiable Sulphur, I am of Opinion, that its Virtues are owing, as I ſhall below endeavour to demonſtrate.

All Authors are not agreed upon the Qualities of Opium. Some conſidering, that when given in the Quantity of a few Grains it oppreſſes the Head, cauſes Sleep, obtunds the Senſe of Pain, ſtops Reſpiration, and puts an End to Life in Sleep, have pronounced it not only *cold*, but have aſſerted it to be ſo in the *fourth Degree*. Others, attending to its bitter, acrid and cauſtick Taſte, have determined it to be *hot*. Nor are they leſs divided upon its Virtues. Some, accuſing it of a narcotick Virulency, have entirely rejected its Uſe. Others put the higheſt Value upon it, and honour it with many Titles and Elogiums. Many of the ancient *Greeks*, according to *Dioſcorides*, were afraid of uſing it, either internally, or externally. "We are

" ſeldom obliged, ſays *Galen*, *l.* 2. *On the Compoſition of Medicines ſecundum locos*, (ſpeaking of the Head-Ache) " to make Uſe of Medicines com-
" poſed of Opium; never but when the Life of a
" Perſon is indangered from the Violence of Pain;
" and then they injure the ſolid Parts, ſo that Cor-
" rectives are afterwards required. Thus Collyri-
" ums made of Opium have been detrimental to
" many, by weakening the Eye, and rendering
" the Sight dim; as alſo Applications of it to the
" Ears, againſt Pain, occaſion Hardneſs of Hear-
" ing. For all Medicines compoſed of the Pop-
" py-Juice are ſtupefactive and benumb the Senſe;
" and on this Account we are obliged to have
" Recourſe to them, when no other Remedy is
" found capable of mitigating the Diſorder."
Many of the Ancients, and of the Moderns alſo have followed *Galen*. Among theſe are *Fernelius*, *Matthiolus*, *Ruellius*, *Tabernæmontanus*, *Rhodius*, *Renealæus*, *Zacutus Luſitanus*, *Quercetanus*, *Schroder*, &c. Nevertheleſs, *Dioſcorides* was not ſo much afraid of its Uſe. " Opium, ſays he, taken to the
" Size of a Vetch produces a Ceſſation of Pain,
" concocts, and procures Sleep; is ſerviceable
" againſt Coughing, and the cœliack Flux: But
" if taken overplentifully it is noxious, ſince it
" brings on a Lethargy, which ends in Death. Be-
" ing mixed with the Oil of Roſes it is efficacious
" againſt the Head-Ache; and with the Oil of Al-
" monds, Myrrh and Saffron, it is dropped into
" the Ears, when affected with Pain. It is uſeful
" in Inflammations of the Eyes, with the roaſted
" Yolk of an Egg. For St. *Anthony*'s Fire, and
" for Wounds, it is mixed with Vinegar; and for
" the Gout, with Woman's Milk and Saffron. If
" uſed by Way of Suppoſitory it cauſes Sleep."
Among the Moderns *Felix Platerus* introduced again

the Uſe of Opium, when it had been a long Time neglected, and, as he ſays, almoſt trampled under Foot. *Sylvius de la Boe* followed the Sentiments of *Platerus*, and declared, that if it were not for Opium he would never practiſe Phyſick; and for this Reaſon he was called the *opiate Doctor*.

But in Order more clearly to diſcover the Nature and Virtues of Opium, we ſhall conſider what are the Effects of it when taken in a moderate Doſe, how People are affected by an over-large Doſe, and laſtly, what Symptoms are produced by uſing it too long.

It is uſed either externally or internally. Externally it incides, reſolves and diſcuſſes Tumours. It ſoftens and relaxes; ripens and promotes Suppuration. By lying long upon the Skin it takes off the Hair, excites an Itching, and if it be freſh, and the Texture of the Skin be tender, it raiſes Veſicles. Applied upon the *Perinæum* it ſometimes provokes Luſt; and ſometimes extinguiſhes the ſame, by ſtupefying the Senſe of the Parts. By an outward Application it often procures Sleep, and eaſes Pain, though theſe Effects are very uncertain. Being put upon the Sutures of the Head it ſometimes kills: For it relaxes the Nerves, and brings on a Stupor, and Palſy.

Internally, the Doſe of Opium ſeldom exceeds gr. ij. or iij. though ſometimes it is extended to ʒj. or more. It is given either in Pills, or diſſolved in ſome Liquor. It exerts its Operation in a ſhort Time after it is taken; to wit, in about half an Hour if diſſolved, and if taken in a ſolid Form, in about an Hour and half.

When given in a due Doſe it produces a certain pleaſing Senſation in the Breaſt and Stomach, and diſpoſes the Mind to Chearfulneſs, like Wine moderately

moderately drank. It diſſipates Cares and Sadneſs, and oftentimes renders the Mind more alert in the Performance of its Offices; whence, for the moſt Part, ſucceed Boldneſs, Self-Confidence, Fortitude, Magnanimity, and Contempt of Dangers. It is for this Reaſon that the *Turks* take a large Doſe of Opium before they engage in Battle. It calms the inordinate Motions of the Blood and Spirits, aſſwages Pains, alleviates the Fatigues of the Body, ſtops Hemorrhages ariſing from an Efferveſcence of the Blood, and checks, at leaſt for a Time, all other Evacuations, except Sweat and inſenſible Perſpiration, which it promotes. It makes the Pulſe great, high, and ſlow; occaſions Dryneſs of the Mouth, and in the Skin redneſs and a ſlight Itching; increaſes the Seed, and ſtimulates the venereal Appetite, eſpecially if drank in a large Doſe. It takes more Effect in a warm and moiſt Seaſon, and in Bodies of a lax Texture, as in Women and Children.

There are other Effects of Opium in a proper Doſe, which frequently follow, though not conſtantly. Thus, it often cauſes Sleep, but not always; for ſome after taking it ſleep leſs. For the moſt Part it raiſes agreeable Dreams or Imaginations. It quiets Vomiting, and the Hickup, and ſometimes excites them; as alſo Spaſms and convulſive Motions. It retards the Concoction of Food in the Stomach, and leſſens the Appetite; ſometimes promotes the monthly Purgations of Women, and thoſe after Delivery, when ſuppreſſed by an Erethiſm and Convulſion of the Fibres; ſometimes helps the Excluſion of the *Placenta*; is often conducive to the Expulſion of Gravel and Stones; provokes Sweat; ſtays ſome Hemorrhages; augments the Milk of Nurſes; and occaſions ſometimes an Intumeſcence of the Breaſts, Erection of

the *Penis*, wanton Dreams, and nocturnal Pollutions, Redneſs and Itching of the Skin, and a Flux or ſometimes a Suppreſſion of Urine.

There are beſides other Effects leſs frequent, namely, ſlight Palſies of a ſhort Duration, eſpecially of the Bladder, a Stammering in the Speech, a Relaxation of the lower Jaw, a Suppreſſion of Sweat, a Looſeneſs, an Evacuation of the Water in Dropſies, (as *Willis* hath obſerved) the Cure of a Numbneſs of the Limbs occaſioned by Cold, Suffocations, Anxiety about the Breaſt, Hickups, Vomiting, Spaſmodick Motions, Swooning, and ſometimes Death; yet this very rarely happens, and never but in Bodies either extremely plethorick, or extremely weakened and emaciated: Wherefore, after great Hemorrhages, and all exceſſive Evacuations, the Uſe of Opium is dangerous. On the contrary, ſome Perſons reduced to Extremity, or (as I may ſay) half dead, are obſerved to recover Strength ſurpriſingly by taking it. Moreover, ſometimes Opium lies a conſiderable Time in the Stomach without Effect, being involved in thick Humours.

When the Narcotick ceaſes to act, theſe Things commonly follow, (*viz.*) a Return of the Diſorders and Pains which it had quieted, and often worſe than before, unleſs their Cauſe have been carried off by Sweat or ſome other Means; a Sweating, though this does not always ſucceed; a frequent making of Water; ſometimes a Looſeneſs of the Belly, Dejection of the Spirits, and Sadneſs; a languid and depreſſed Pulſe, and Itching of the Skin.

An over-large Doſe of Opium is followed by much the ſame Affections, as are uſually produced by the ſwilling a large Quantity of Wine; to wit, Chearfulneſs, immoderate Laughter, Relaxation, and

and Debility of the Limbs, Raving, Defect of Memory, Giddineſs, Dimneſs of the Eyes, Laxneſs of the corneous Coat, Dilatation of the Pupil, a Faultering in the Speech, and heavy Drowſineſs, with a great and ſlow Pulſe; a Redneſs of the Face, Hanging of the Jaw, Intumeſcence of the Lips, Difficulty of Breathing, Fury, Heat of the Stomach, and ſometimes Oppreſſion; Luſt, with a Priapiſm; Heat of the Skin, and Itching; a *Nauſea*, Vomiting, and Hickups; an unequal Pulſe, ſometimes low, ſometimes high; Convulſions, cold Sweats, Swooning, and Death. All theſe Symptoms do not attack all People, nor with equal Violence, but ſome more, ſome leſs, according to the different Conſtitution of the Body, the different Doſe of the Opium, and other Circumſtances.

They who eſcape Death, recover, for the moſt Part, by a very copious Flux of the Belly, or by plentiful Sweats, ſmelling of Opium, and attended with great Itching of the Skin. It is to be obſerved that a Flux of the Belly is the more ſecure Means of Recovery; that they are in moſt Danger who have a weak Stomach, and a lax Texture of the Skin; and that ſuch as are furious eſcape Death more eaſily, than ſuch as are ſtupid and comatoſe.

The immoderate and long continued Uſe of Opium produces a Relaxation and Debility of all the Parts, an Indolence, Languor, Sloth, Liſtleſsneſs to Labour, and Sluggiſhneſs of the Body, with a Dulneſs or Stupidity of the Mind, ſuch as is obſervable in Drunkards, except at the Time when a freſh Quantity of Opium lies digeſting in the Stomach. It likewiſe produces a Want of Appetite, a difficult and ſlow Concoction, a Dropſy, a Diminution of Senſe and Motion, an Incurvation of the Body, a Trembling of the Limbs, an untimely

timely old Age, an Acrimony and depraved *Craſis* of the Blood, a frequent Inclination to make Water, a Propenſity to venereal Acts, a Priapiſm, and frequent Emiſſions of the Seed in Sleep.

They who have been long accuſtomed to an immoderate Uſe of Opium, and leave it off on a Sudden, are affected with theſe Symptoms, in a greater or leſſer Degree, according to the Difference of Conſtitution, or of the Exceſs in its Uſe; to wit, with a deep and inſupportable Sadneſs, with Anxiety, Languidneſs, and Faintings; by which the poor ſick Perſon is miſerably tormented, and reduced to Extremity, and even ſometimes to Death more deſirable to him than Life, unleſs he return to the Uſe of Opium, or of Wine; though the Force of this is not to be compared to that of Opium. Moreover, with theſe Affections the old Complaints, which had been palliated by the Narcotick, often return with greater Violence.

Having enumerated the chief Effects of Opium, we ſhall now attempt to explain the Manner in which it operates. The abovementioned Effects then of Opium ſeem to proceed from its remarkable Action in the Blood, which it wonderfully diſſolves, expands, and rarefies. Hence ariſe ſo many different, or oftentimes contrary *Phænomena*. The Diſſolution and Rarefaction of the Blood are proved by the Pulſe, which is great, high, yet ſoft and ſlow; by the Tumefaction of the Face with Redneſs; by the Heat diffuſed over the whole Body; and by the Fluidity of the Blood of Perſons who conſtantly uſe Opium: For it ſcarce concretes when cold. And it hath been obſerved, that the Blood of *Turks* and *Indians*, who have fallen in Battle, has continued as fluid one or two Days after their Death, as if they had been ſlain but the Inſtant before.

The

The Blood thus expanded, diſtends the Arteries of the whole Body; and the Effects and Appearances are various, according to the different Bowels in which this ſudden Rarefaction is produced. As ſoon as the Blood circulating through the Brain is rarefied, the ſmall Arteries, being diſtended and poſſeſſing a larger Space, compreſs the nervous Canals interwoven with them, more or leſs, according to their greater or leſſer Dilatation. The Nerves being too much compreſſed, a ſmaller Quantity of the nervous Juice enters into them and flows to the Parts: Whence the Functions of the Body are not ſo well performed, the Arteries vibrate more ſlowly, though from the rarefied Blood they are more than uſually diſtended; and therefore the Pulſe is high, but leſs frequent. A preternatural Heat is raiſed over the whole Body, becauſe the circulatory or progreſſive Motion of the Blood being diminiſhed, with an Increaſe of Fluidity, its inteſtine or fermentative Motion, upon which the Heat depends, is augmented. From the Decreaſe of the Afflux of the nervous Juice to the Parts, and of its Reflux from the Parts to the Brain, proceed a Numbneſs of the Limbs, a Diminution of Senſe, and of Motion. A Sleep is likewiſe brought on more or leſs deep, as the Nerves, or the Origins of the Nerves appointed for the Performance of the animal Functions, are more or leſs compreſſed by the Arteries. Laſtly, Death ſometimes follows, if from too great and ſudden an Intumeſcence of the Arteries, moſt of the nervous Fibres of the Brain are ſo far ſtraitened, that their Juice can no longer paſs through them. It is entirely after the ſame Manner that Opium eaſes Pain: Not that it removes the Cauſe of Pain; but becauſe, by hindering the Influx of the nervous Juice into the Nerves, it prevents the Arrival of the painful Senſation, from the Part affected, at the Origin of the Nerves or the Soul.

From

From a Deficiency of the nervous Juice or animal Spirits, the Secretions and Excretions are leſſened, or wholly ſuppreſſed; which is particularly obſervable in the Liver and Kidneys. Moreover, the ſame happens in theſe Bowels as in the Brain; namely, by the Arteries diſtended beyond Meaſure, the excretory Veſſels of the Bile and Urine are compreſſed, and the Excretion of theſe Humours is ſtopt. The Perſpiration alone remains perfect after the taking of Opium, and even acquires Strength from it; ſince there are no ſecretory Veſſels appointed for Perſpiration: But the perſpirable Matter ſeeks to itſelf an Exit from all the Veſſels through the Pores of their Membranes; and by Opium the Membranes are extended, and the Pores dilated. A Sweat likewiſe ſometimes ſucceeds, becauſe the ſudoriferous Ducts, being placed at the Extremities of the Veſſels in the Skin, are not ſurrounded by ſmall Arteries or other dilatable Veſſels, which by preſſing upon them may hinder this Evacuation.

Some Evacuations indeed, when ſuppreſſed, are ſometimes reſtored by the Uſe of Opium; to wit, if that Suppreſſion ariſe from a violent Irritation of the nervous Membranes, ſo that, by the continual and abundant Afflux of the animal Spirits, the Fibres are ſtrongly drawn up and convulſed. This Afflux of the animal Spirits being reſtrained or diminiſhed, the nervous Fibres are relaxed, and the ſuppreſſed Evacuations are reſtored, at leaſt for ſome Time. Thus the Flux of the *Menſes* and *Lochia*, the Excluſion of the Secundine, the Excretion of Stones from the Kidneys, a Purgation, *Diureſis*, or other Evacuations, are ſometimes promoted by Opium: And after the ſame Manner it uſually calms the ſpaſmodick Motions of hyſterical Women, or of Hypochondriacks.

They

They who uſe opiate Medicines for a long Time, often find that the ſame Doſe which in the Beginning was ſufficient to induce Sleep, after ſome Time becomes ineffectual; and that a larger Doſe is required, or alſo, to have the deſired Effect, that it muſt be daily augmented. Now this happens, becauſe the Blood, by the firſt Doſes of the Medicine, acquires a certain Degree of Fluidity, which the ſame Doſe is not able to increaſe. For the ſuperfluous Recrements of the Blood having been caſt off by Sweat or by Perſpiration, the Bulk of the Blood is diminiſhed, ſo that it does not afterwards diſtend the Arteries ſufficiently to compreſs the Nerves and cauſe Sleep. To ſwell the Arteries to an equal Amplitude a greater Quantity of Opium is required, whereby the Maſs of Blood may be further diſſolved and rarefied; and ſo more and more, until it hath acquired the utmoſt Degree of Fluidity poſſible: And then larger Doſes of Opium, reiterated and increaſed, are no longer able to procure Sleep.

Here it may be demanded, what are the Principles, by which Opium produces this remarkable Diſſolution and Expanſion of the Blood? To which I anſwer, that Opium is compounded of Salts, both acid and alkaline-urinous, and of a thick Sulphur greatly condenſated, but capable of the greateſt Diviſibility and Expanſion: And I think, that its ſoporiferous Virtue is not owing ſo much to the Salts as to the Sulphur; ſince we obſerve, that Bodies replete with a Sulphur of the like Sort occaſion Sleep, as Saffron, Nutmeg, Caſtor, *&c.*

Now, Opium and the ſoporiferous Aromaticks, when taken into the Stomach, are diſſolved by its fermentative Liquor, and put into Fermentation. Their narcotick Sulphurs half expanded by this Fermentation are carried to the Maſs of Blood; where

where they not only preſerve the fermentative Motion received in the Stomach, but are alſo thrown into a greater Motion by the ſpirituous Parts of the Blood: They are then mingled with the ſulphureous Parts of the Blood, which they draw into Fermentation with themſelves, and divide and attenuate; and thus diſſolve and rarefy the whole Maſs: Whence Drowſineſs and Sleep. Nor does Opium operate before its divided Sulphur arrives at the Blood. It is true, that a certain grateful Senſation of Warmth is perceived in the Stomach in a ſhort Time after taking Opium, from the gentle Titillation of its ſaline-oily Parts which are ſet at Liberty by the gaſtrick Juice; but Sleep does not come on till Half an Hour, or an Hour after; which is the Time required for the Conveyance of the ſulphureous Particles of the Opium to the Maſs of Blood.

If it happen that the Particles of Opium are retained too long in the Stomach, or taken in too great a Quantity; then, from the over-ſtrong Titillation and Irritation of the nervous Fibres of the Stomach proceeds a Nauſea, Hickup, or Vomiting.

From theſe Things duly conſidered, the *Rationale* of the other Effects of Opium will be ſufficiently clear. I ſhall therefore no longer dwell upon their Explanation.

When Opium hath been taken in too large a Doſe, and the grievous Symptoms occaſioned thereby threaten Death, the Cure ought to be attempted, firſt by Blood-letting, and in the next Place by an Emetick. By *this* not only the Remains of the Opium in the Stomach are thrown up, but alſo by the Efforts of Vomiting the nervous Membranes are ſhook, and by thoſe Succuſſions the intercepted Afflux of the Spirits to the Parts is reſtored.

By

By *that* the Blood-Veſſels, diſtended beyond Meaſure, are evacuated and reduced to their uſual Diameter. As to both theſe Means of Cure, we muſt be particularly cautious that the Patient have ſtill Strength enough to bear them; otherwiſe perhaps the Remedy might be worſe than the Diſeaſe. Afterwards, acid Draughts are to be given, made of the Juices of Citrons, Oranges, Currants, Vinegar, Spirit of Sulphur, or Vitriol: For they hinder the Expanſion of the Sulphurs, reſtrain their Force, and thicken the rarefied Blood. Acrid ſtimulating Clyſters are to be injected, Powders blown up the Noſtrils made of Pellitory or Euphorbium, and volatile Salts may be taken inwardly. Bliſtering Plaiſters and Sinapiſms are advantageouſly applied to the Neck and the Soles of the Feet; alſo Cupping Glaſſes, Scarifications, Burnings, painful Frictions, *&c.* are uſed with Succeſs. For by theſe ſtimulating Remedies the nervous Membranes are ſtrongly vellicated, the Spirits are derived more abundantly to the Parts, which thence recover their Tone, the Fluids of the renal Ducts, being more forcibly preſſed, break forth where they find a Paſſage, and the Secretions and Excretions are reſtored.

With Regard to the Operation of Bliſtering Plaiſters in the Deliriums occaſioned by Opium, *Alexander Thomſon*, an *Engliſh* Phyſician, in his *Medical Diſſertations on Opium*, obſerves, that when the Patient, during the firſt Operation of the Plaiſter, complains of a Coldneſs falling from the fore Part of his Head down his Neck, he is immediately freed from the Delirium. This, certainly, is a great Argument that the Brain, by Means of the *Stimulus* communicated from the Plaiſter to its nervous *Compages*, is unloaded of a ſuperfluous Quantity of Liquid: Whence a Solution of the Delirium.

The

The Ancients, who believed that Opium was exceſſively cold, endeavoured to correct it by hot Medicines, and ſuch as diſſolve the Blood when coagulated. Hence the *Theriaca*, *Mithridate*, *Philonium*, and other opiate Compoſitions. The Moderns have eſtabliſhed different Methods of qualifying Opium, according to their different Opinions concerning it. Some correct its narcotick Force with Caſtor and Saffron; others with Vinegar, Citron-Juice, Spirit of Vitriol or Sulphur, and the like acid Liquors; others with alkaline Salts, both fixt and volatile; others with Spirit of Wine, Brandy, Wine, or other fermented Liquors; others by Fermentation; others, again, by Torrefaction. But ſince Opium is not preſcribed but to eaſe Pains, and to induce Sleep, they vainly try to correct the Virtue by which it ſhould produce theſe Effects. They act contrary to themſelves. They want a Medicine to cauſe Sleep, and are afraid of it: They give it for that Purpoſe, and endeavour, as much as they can, to deprive it of its ſoporiferous Virtue. There is no Poiſon contained in Opium, this Virtue excepted: It therefore requires no Correction. It needs only to be cleanſed from the Droſs, Earth, Gravel and other Impurities; and nothing is to be feared from it, provided that it be properly given, and in a due Doſe.

It is purified from its Droſs, or (as they ſay) is prepared, by diſſolving it in ſome proper Liquor and ſtraining it. The ſtrained Liquor is often put by, and given in Drops under the Name of the *Tincture of Opium*, or *Liquid Laudanum*. Sometimes the Liquor is evaporated to the Conſiſtence of a ſolid Extract, and given in the Form of Pills, or in Powder.

As in Opium there are two Subſtances, the one gummous and the other reſinous, it is not equally ſoluble

ſoluble in all Liquors. In aqueous Liquors the Gum only diſſolves; in Spirit of Wine only the Reſin. In Wine, in Vinegar, or in Brandy, both Subſtances diſſolve together. From this Diverſity of Menſtruums ariſe different Tinctures of Opium, that is to ſay, different not only in their Nature, but in their Effects alſo. For the Tincture of Opium extracted by Spirit of Wine, by the general Conſent, is more intenſely narcotick, affects the Head more violently, and often cauſes Deliriouſneſs, as I many Times obſerved in a certain hypochondriacal Perſon, who was troubled with Wakefulneſs, and when he took the Tincture of Opium prepared with Water, he ſlept with great Tranquillity; but, on the contrary, when he took the Tincture drawn with Spirit of Wine, he was ſurpriſingly affected with a Phrenſy.

The Tincture of Opium prepared with Vinegar ſometimes ſuppreſſes the Urine, according to the Obſervation of *James le Mort*, a ſkilful Phyſician and Chymiſt. That made with alkaline Salts is of little Service for procuring Sleep; becauſe the Salts, vellicating the nervous Membranes by their Acrimony, ſhake off the Drowſineſs brought on by the Opium. It is true, that the Tincture of Opium joined with volatile urinous Salts provokes Sweat, and thus prepared is convenient in ſome Affections. But I think, with the learned *Wedelius*, and the ſkilful Phyſician and Chymiſt abovementioned, that the Preparation of Opium with Water is the ſafeſt, and the moſt efficacious of all others. For nothing can be feared from this Menſtruum; and Opium thus prepared is not only purified from its heterogeneous Parts, but is alſo deprived of its Reſin, which ſome Phyſicians are afraid of. *John Jones*, a Phyſician of *London*, in a Treatiſe intitled, *The Myſteries of Opium revealed*, puts ſo high a Value

upon this ſimple Tincture, that he dignifies it with the Title of *Panacea.* Indeed, ſince it appears that Opium is neither cold, nor coagulates the Blood, as the Ancients believed, what Need is there of ſo many hot and aromatick Subſtances wherewith it is uſually mixed ? Are they intended to aſſiſt its Virtue ? But I aſk, what Aſſiſtance can Opium receive from Saffron, Caſtor, and other Aromaticks, which are vaſtly inferior to it, either for inducing Sleep, or for provoking Sweat ? Some, however, admit theſe Aromaticks into opiate Compoſitions for other Reaſons; namely, to correct the viroſe Smell of the Opium, or to extend it more, that it may be diſtributed into ſmaller Doſes. Upon the ſame Account likewiſe *Sydenham* prefers liquid Opium to the dry Extract, a Grain of Opium when diſſolved being more eaſily divided into fifteen or twenty Drops, than into ſo many Parts in the dry Extract.

The Purgation, or Preparation, of Opium with Water is performed thus.

Take of Opium cut ſmall q. v. diſſolve it in q. ſ. of clear diſtilled Water by digeſting in B. A. Separate the Solution from the Reſidue, and when it is cold filtre it through Paper. Pour a freſh Quantity of Water to the Reſidue, digeſt, ſeparate from the *Fæces* and filtre as before; and thus reiterate the Affuſions, *&c.* till no Tincture is obtained. Then evaporate all the Solutions together in B. M. to the Conſiſtence of a ſolid Extract. The Doſe is from a Quarter of a Grain to gr. j. or ij.

When a liquid Opium is required, one Grain of this Extract may be diſſolved in q. v. of any ſuitable Water, and be given in ſeveral Draughts at Diſcretion.

The Tincture of Opium with Water soon contracts a Mouldiness; and therefore if a liquid Laudanum is to be kept a long Time, the Tincture is prepared either with Wine or with Brandy: Whence two Preparations of Opium in general Use at *Paris*, (*viz.*) the *liquid Laudanum* of *Sydenham*, and the *anodyne Drops* of *Tabor*. To make the *liquid Laudanum* of *Sydenham*.

Take of Opium in thin Slices ℥ij. Saffron cut small ℥j. Cinnamon and Cloves bruised, ā ʒj. *Canary* Wine ℥xvj. Let them stand together in Digestion in B. M for two or three Days; then strain off the Wine, and keep it for Use.

The *anodyne Drops* of *Tabor* are prepared thus.

Take of Opium in Slices ℥iss. Sassafras-Bark ℥ss. the Root of Assarabacca ℥ss. Brandy ℔j. Let them digest in the Heat of the Sun in a close Vessel for nine Days, and put the strained Liquor by for Use. The Dose is from gutt. iv. to xv. or xx.

Prepared Opium is called in the Shops *Laudanum*. This Name was first given it by *Paracelsus* from the Word *Laudandum*, as being *a Medicine which deserves Praise*.

Some propose the Torrefaction of Opium as a Means to destroy its narcotick Virulency. The Force of Opium when torrefied is without Doubt abated, though not, as they say, by Reason of the Exhalation of its narcotick Sulphur, but because many Particles of the Opium have been destroyed and burnt to Coals. Wherefore this Correction seems quite useless.

Others endeavour to divide and attenuate the thick Sulphur of Opium by Fermentation. In Ef-

fect, when it has been fermented, it is not ſo ſtupefactive and ſoporiferous, but rather promotes Perſpiration and Sweat, after the Manner of Aromaticks, by agitating the Blood and the Humours. The Fermentation is managed thus.

Take of Opium ℔j. diſſolve it in ℔iij. of common Water. Then,

Take of the beſt Honey ℔iij. which likewiſe diſſolve in ℔xij. of common Water.

Mix the two Solutions in a proper Veſſel, and ſet them in a warm Stove to ferment. When the fermenting Liquor exhales a vinous Smell, draw off its Spirit by Diſtillation, having firſt ſeparated the Froth and *Fæces*. Strain the Liquor left in the Retort, and evaporate it to the Conſiſtence of an Extract; which diſſolve in the Spirituous Liquor before drawn from it, and reducing the Tincture to the Conſiſtence of a thin Syrup keep it for Uſe.

This Tincture may doubtleſs be given in larger Doſes than the common Tinctures of Opium; but otherwiſe little Advantage is gained by this operoſe Preparation. Nor is that of *Helmont*, with the Juice of Quinces, more uſeful. It is as follows.

Take of the Juice of Quinces newly expreſſed ℔x. of Opium cut into thin Slices ℔j. Let them ſtand together in a gentle Heat to ferment for two or three Weeks. Afterwards pour the Liquor off clear from the *Fæces*, and add to it of Cinnamon ʒiij. Cloves, Mace, Nutmeg, and the leſſer Cardamom, ā ʒj. the leſſer Galangal ʒiſs. Digeſt them together for two or three Days. Then filtre the Liquor through Paper and evaporate it to the Conſiſtence of a ſolid Extract.

Some take off the viroſe Smell of Opium by long Digeſtions, and repeated Diſſolutions and Diſtillations, and by this Method they think to deprive it of its narcotick Sulphur. The Proceſs may be conducted thus.

Take of Opium q. v. diſſolve it in q. ſ. of common Water, and filtre the Solution through Paper. Let it ſtand in Digeſtion for eight Days in B. A. and afterwards diſtil it from a Glaſs-Alembick with a gentle Fire to the Conſiſtence of Honey. To this mellaginous Extract pour more Water, digeſt for eight Days, and diſtil again to the ſame Conſiſtence. Repeat the Affuſions, Digeſtions and Diſtillations, till both the Water and the Reſidue are void of Smell. Then laſtly, diſſolve the Reſidue in a freſh Quantity of Water, ſtrain, and evaporate it to the Conſiſtence of a ſolid Extract; which is ſo weak that it may be given with Safety from gr. iij. to x.

By theſe repeated Digeſtions and Diſtillations the Sulphurs are divided and attenuated, and fly off with the volatile ſaline Parts. Whence the terreſtrial *Moleculæ* remain almoſt inert with the groſſer Sulphurs and Salts. We therefore think this Prepation can anſwer no extraordinary Purpoſes.

Having mentioned the uſual Preparations of Opium, we ſhall now lay down ſome Rules and Cautions concerning its Uſe.

1. The Tincture and Extract of Opium, drawn with aqueous Menſtruums, are preferable to all other Preparations.

2. The Tinctures and reſinous Extracts of Opium drawn with Spirit of Wine ought to be rejected. For they are more intenſely narcotick; they op-

preſs the Head, and inflame the Blood and Spirits; they ſometimes alſo adhere to the Membranes of the Stomach, and occaſion Oppreſſions, Nauſeas, Hick-ups, and Vomitings.

3. The Preparations of Opium with Acids, which obtund and deſtroy its Force, are uſeleſs. Thoſe with volatile Salts, which by their Acrimony hinder Sleep, are accounted no better, unleſs intended to promote Sweat; for then the Salts are ſerviceable. Thoſe alſo with fixt Alkalies, though they provoke Urine, greatly diminiſh the ſoporiferous Virtue of the Opium.

4. In the Form of Pills the Operation of Opium is ſlow and uncertain. It is more advantageouſly given in a Bolus, ſufficiently extended with other Powders, or diſſolved in ſome proper Liquor: For it operates ſooner, and agrees better with the Stomach.

5. It ought never to be given when the Stomach is full of Food. Wherefore, after ſolid Food an Interval of four Hours is neceſſary, and after Broth, at leaſt, two Hours. Neither are ſolid Aliments to be taken till the Opium has finiſhed its Operation; nor Broth, unleſs upon urgent Neceſſity, and only three Hours after the Narcotick.

6. It ought not to be given during the Flux of the *Menſes*, the Child-bed Purgations, periodical Hemorrhages, or critical Evacuations. Nor ought it to be given without Caution after any large Evacuation whatſoever, leſt from a Deficiency of Spirits, the Patient, already too prone to Sleep, ſhould be thrown into too long, or perhaps an eternal ſleep, or into a Palſy.

7. It muſt be given with the greateſt Caution to Men of weakly Conſtitutions, of a lax Texture of Body, or weakened by long Diſeaſes, to Children, pregnant Women, and old People, to ſuch as have a weak Stomach and bad Digeſtion, and to ſuch alſo

ſo as are extremely plethorick, for perhaps, from the ſudden Rarefaction of the Blood, a deadly Sleep, or an Hemorrhage, may come on. It ought ſeldom to be given in acute Diſeaſes, eſpecially ſuch as are inflammatory, for Fear leſt the apparent Abatement of the Diſeaſe ſhould deceive both the Phyſician and the Patient.

8. Its Uſe ought to be ſometimes interrupted, otherwiſe it will become entirely ineffectual, or hurtful.

9. The Indications for giving Opium are principally three; namely, great Wakefulneſs, ſharp Pain of long Continuance, and enormous Vomiting or Purging.

10. *Sydenham* likewiſe adds great Diſorders of the animal Spirits: Whence it ſometimes affords much Relief in ſpaſmodick Affections of the Nerves, and in hyſterick Fits.

11. To this Virtue is chiefly owing the Faculty which is found in Opium of promoting ſome Evacuations, when ſuppreſſed by a convulſive Affection of the Nerves. Thus *Sydenham*, in his *Epiſtle to Cole*, *p.* 488. to reſtore the Purgations of Child-bed Women, when other Remedies have been tried in vain, propoſes Laudanum. "In this Caſe (ſays he) "Laudanum, though it be in its own Nature aſ- "tringent, yet as it calms the Perturbation of the "Spirits, whereby the wonted Evacuation of the "*Lochia* had been interrupted, it ſometimes proves "very beneficial, and, when Emmenagogues are "of no Service, is able to recal the Flux. It is "however to be well obſerved (continues the ſame "Author) if we miſs our Aim with the firſt Doſe, "and the Flux does not ſucceed, that Opium is by "no Means to be repeated."

12. Many Phyſicians highly extol Opium in all Diſeaſes, whether chronical or acute, not only as a

ſoporiferous Medicine, but as an extraordinary Alterative. But they who ſhall attentively examine, for ſome Time, the Motions of Nature in Diſeaſes, will diſcover how unſtable and illuſive this Practice muſt be. For Opium not only affords but a tranſitory Relief, by palliating the Symptoms which ſoon return, leaving the Cauſe of the Diſeaſe untouched, but alſo conceals, as it were under a dark Cloud, the Signs by which the Phyſician ſhould diſcern the Diſeaſe and the Indications of Cure. It raiſes other Symptoms foreign to the Diſeaſe; weakens, or rather extinguiſhes the Efforts of Nature to perform a Criſis; and, by a long Uſe, renders Diſtempers, which were free from Danger, extremely grievous, and many Times mortal. Thus, this ſoporiferous Juice, by gaining fallacious Reſpites, uſually impoſes both upon the Patient and the Phyſician; ſince a Diſeaſe is often the Endeavour of Nature to overcome the peccant Cauſe, and Pain itſelf is ſometimes the Senſation of that Endeavour, but oftener the Stimulation of the Part affected by the peccant Humour, whereby Nature is vehemently irritated to its Expulſion. Certainly, that Drug which deprives Nature of this *Stimulus*, does not deſerve the Name of a Remedy. Thus, for Inſtance, in nephritick Diſorders ariſing from a Stone obſtructing either of the Ureters, the Pains which torture the Sick ought not to be regarded as uſeleſs. For the Kidneys, Ureters, and abdominal Muſcles, provoked by theſe Irritations, are at one Time ſtrongly contracted, at another Time relaxed; and by theſe Means the Stone is ſometimes ground, comminuted, and forcibly protruded, and, by the like Efforts reiterated, and the Help of Medicine, is at length expelled into the Bladder. The ſame may be ſaid of the Pains in the Gout. For the Humour, which is lodged and concreted in peculiar Veſſels

of

of the Joints, is gradually ground and reſolved by the irritated and inflamed Part, ſo that it paſſes at length from ſmaller Veſſels into larger, or acquiring a gentle Effervescence from the Heat of the Part excited by the Pain, it is attenuated, and made capable of tranſpiring through the Pores of the Skin.

If the Uſe of Opium be hurtful in theſe Caſes, what muſt it be in others? 'Tis in vain to oppoſe to us the ſucceſsful Practice of ſome Phyſicians who are always preſcribing Opium. Let us but attend a little to their Method of Cure, which conſiſts moſtly in acrid, ſpirituous, ſtimulating Medicines, ſuch as volatile Salts, eſſential Oils, Aromaticks, *&c.* and it will not be difficult to judge, that either this Method hath been invented to correct the bad Effects of Opium, (*viz.*) to diſſipate the ſoporous Affections brought on by its Uſe, and to rouſe languid Nature, or elſe, that they have employed Opium to allay the Tumults which have been raiſed by this new and unwarrantable Practice.

13. Opium thrown into the Inteſtines in Clyſters produces the ſame Effects as when taken by the Mouth; nay frequently greater; and ſometimes occaſions more grievous Symptoms. It is therefore ſeldom diſſolved in Clyſters. Infuſions or Decoctions of the Heads of the white Poppy are generally preferred: But neither ought theſe to be uſed without the greateſt Caution; and only to ſtay immoderate Fluxes of the Belly, or in violent Pains of the Colick.

14. The Virtue of Opium externally applied is doubtful and uncertain; for which Reaſon it is very ſeldom applied to procure Sleep; nor indeed ought it to be done raſhly. In the Tooth-ache the Quantity of one or two Grains is frequently laid upon the temporal Arteries, and not with Relief. But to the

the Eyes and Ears, according to *Galen*, opiate Compositions are extremely injurious; for they impair both the Sight and Hearing. In Wounds likewise they often bring on a Gangrene.

15. The same Judgment must be formed of other papaverine Medicines as of Opium, though their soporiferous Virtue is much weaker.

In these the Heads of the white Poppy are chiefly employed, from which, being gathered when mature, and kept dry, are prepared Infusions and Decoctions; as also a Syrup, commonly called *Diacodium*. The Seeds are left out of these Compositions; because they are not soporiferous, but oily and nutritive. Formerly they were made into Bread, as *Dioscorides* relates. And not only the Seeds of the white Poppy are alimentary, but those of the black Poppy also; since *Matthiolus* writes, that the Inhabitants of the Valleys about *Trent*, of *Stiria*, and the upper *Austria*, eat Cakes made of the Seeds of both Sorts of Poppy with Meal; and though they constantly use the Oils expressed from these Seeds with their Food, yet are not drowsy, nor sleep longer than common. And in the Year 1710, the Olive-Trees being killed by the Cold of the Winter, the same Oils were commonly used here instead of the Oil of Olives, without any sensible Inconvenience. Moreover, *Tournefort* hath observed, that the Ladies of *Genoa* eat white Poppy-Seeds with Sugar in great Abundance, and are not lethargick, or the more sleepy for them. Wherefore, in preparing Emulsions to soften the Acrimony of the Humours and to abate their Effervescence, the Seed of the white Poppy is frequently mixed with the four greater cold Seeds. The Oil is likewise drawn from it for external Use in Liniments and Unguents.

Take

Take one Head of the white Poppy cut ſmall, without the Seeds. Boil it in ℥xij. of Water to Half. Strain the Liquor, and give it to the Patient at Bed-time, to forward Sleep.

Take of white Poppy-Heads N°. ij. Cut them ſmall, and boil them in ℔j. of clear Water to a Diminution of one third Part. With the ſtrained Liquor, and the Seeds of the white Poppy and Melons, ā ℥ſs. make an Emulſion, f. a. in which diſſolve of the Syrup of the Water-Lily ℥j. Divide the Emulſion into two Doſes, to be drank in the Night at the Interval of four Hours.

Take of the four greater cold Seeds ℥ſs. Bruiſe them in ℥vj. of a Decoction of Barley and Marſh-Mallow Roots. In the ſtrained Liquor diſſolve ℥ſs. or ʒvj. of Diacodium. Make an Emulſion to be taken when going to reſt, and at a proper Diſtance from Meals.

Take of Diacodium ʒx. the diſtilled Waters of red Poppy-Flowers and Purſlain, ā ℥iv. the Water of Orange-Flowers ℥ſs. Mix and divide them into two Draughts. Let one be taken at Bed-time, and the other a few Hours after, if required.

Take of the ſolid Extract of Opium gr. j. Crabs Eyes prepared ℥ſs. Rub them together in a marble Mortar till they are perfectly mixed. Divide the Powder into ſix equal Parts, and give one every ſixth Hour to eaſe a violent Cough.

Take of prepared Opium gr. ſs. Extract of Saffron gr. j. Syrup of Marſh-Mallows ℥ſs. Diſſolve them in ℥vj. of an Infuſion of red Poppy-Flowers. Make a Draught to be taken at Night to quiet a troubleſome Cough, and to promote Sleep.

Take

Take of prepared Opium gr. j. red Coral and *Japan* Earth, ā ʒſs. To theſe, when perfectly mixed by rubbing in a Mortar, add Cinnamon and Nutmeg reduced to Powder, ā ℈j. Extract of Juniper-Berries ʒj. Syrup of Wormwood q. ſ. Mix them into an Opiate, to be divided into four Doſes, and given at proper Intervals in immoderate Fluxes of the Belly attended with griping Pains, or in Superpurgations.

Take of Caſtor gr. v. prepared Opium gr. j. or the liquid Laudanum of *Sydenham* gutt. xij. Diſſolve them in the diſtilled Waters of Orange-Flowers and Mugwort, ā ℥iij. To the Solution add of the Syrup of Mugwort ℥j. Let this Mixture be taken by Spoonfuls to calm hyſterick Diſorders.

ARTIC. V. *Of the true* ACACIA.

Acacia vera, et Succus Acaciæ, Off. Ἀκακία, *Gal. Damocrat. et aliorum.* Ἀκακίας Ἔγχύλισμα, *Dioſc.* Δάκρυον κυανωπὸν ἀκάνθης, *Androm.* The true Acacia is an inſpiſſated gummous Juice, externally of a brown Colour or blackiſh, internally ſomewhat inclining to red or yellow, of a firm, hard Conſiſtence, growing ſoft in the Mouth, and of an auſtere aſtringent, but not unpleaſant Taſte. It is brought to us from *Egypt* in roundiſh Cakes, weighing four, ſix, or eight Ounces, and wrapt up in thin Bladders. It ought to be choſen freſh, pure, bright, and eaſily ſoluble in Water. When it is very black and dry, or mixt with Droſs, it is bad.

It is expreſſed from the Pods of a thorny Tree called *Acacia folio Scorpioides leguminoſæ*, C. B. P. 392. which we have before mentioned in the Article of Gum Arabick; for both are produced from the

the ſame Tree. Before the Pods are ripe they are moiſtened with Water, and bruiſed, and the Juice being expreſſed from them is evaporated to a due Conſiſtence by Coction, and formed into ſmall Cakes.

It conſiſts of a moderate Portion of acid Salt, a little alkaline Salt, a copious aſtringent Earth, and a large Quantity of both thin and thick Oil. From theſe combined ariſes a ſaline, aluminous, mucilaginous Compound.

It is reckoned incraſſating, aſtringent, and repercuſſive. It ſtrengthens the Stomach, quiets Vomiting, ſtops Looſeneſſes, and all Hemorrhages, by inſpiſſating the Blood, ſoftening the Acrimony of the Humours, and corroborating the ſolid Parts. It is given inwardly from ʒſs. to ʒj. either in Powder or a Bolus, or diſſolved in ſome proper Vehicle.

Alpinus relates, that the *Egyptians*, againſt Spitting of Blood, give a Drachm of it every Morning diſſolved in ſome Liquor. He likewiſe propoſes the ſame to be injected into the *Uterus* to ſtay immoderate Hemorrhages. In *Egypt* it is frequently employed in Collyriums to ſtrengthen the Eyes, and to preſerve them from Inflammations, which are there very common; and is advantageouſly uſed in repellent Gargariſms, to reſtrain the Fluxion in the Beginning of Quinſeys. *Alpinus* moreover aſſerts, that nothing is of greater Service in the Falling down of the *Anus* and *Uterus*, than a Solution of this Juice in a Decoction of the Leaves and Flowers. He commends it alſo in Fomentation for gouty Pains: But in theſe Affections it is not ſafe; ſince by its Aſtringency it checks the Humours, and often repels them to the internal Parts.

Take of the true Acacia ʒſs. Conſerve of red Roſes ʒj. red Coral prepared ʒſs. Syrup of Comfrey q. ſ. Mix and make a Bolus for Spitting of Blood.

Take

Take of *Egyptian* Acacia ʒj. Diſſove it in the Juices of Plantain and Ground-Ivy, ā ʒiij. To the Solution add of the Syrup of dried Roſes ʒj. and let the Mixture be taken by Spoonfuls in Hemorrhages.

The Curriers at *Cairo*, ſays *Alpinus*, conſume great Quantities of this Juice in blackening Leather.

When the true Acacia is wanting in the Shops, its Place is ſupplied by another Juice called *Acacia noſtras* or *Germanica*, which is the inſpiſſated Juice of the unripe Sloe or Fruit of the *Prunus Sylveſtris*, C. B. P. 444. It is a dry, hard, ponderous Extract, appearing on the Outſide black, within ſhining, and has an acid auſtere Taſte. It is brought from *Germany* in Cakes wrapt up in Bladders, and is alſo prepared here in the Shops.

It has a greater Acidity than the true Acacia, and therefore is accounted more cooling and aſtringent; but as it contains much leſs Oil, it does not ſo efficaciouſly ſoften the Acrimony of the Humours. Wherefore, ſince its Virtues are ſomewhat different from thoſe of the true Acacia, it ought not to be ſubſtituted for that in the *Theriaca*.

It is ſometimes given to ʒj. in the Form of a Bolus, or diſſolved in Liquors, againſt Hemorrhages and Looſeneſſes; and is advantageouſly mixed into Gargariſms for Quinſeys.

Take of the *German* Acacia ʒj. Sal Prunel ʒſs. Honey of Roſes ʒj. the diſtilled Waters of Roſes and Plantain, ā ʒiij. Make a Gargariſm to be uſed in the Beginning of a Quinſey.

ARTIC. VI. *Of* HYPOCISTIS.

Hypociſtis, *Off.* Ὑποκιστὶς, *Dioſc.* *Taraſith*, *Arab.* This is a dry, black, ſhining Juice, of an auſtere Taſte.

Taſte. It is brought from *Provence*, *Languedoc*, and the *oriental* Countries. It ought to be made Choice of pure, bright, black, and not burnt.

The Plant from which it is obtained is called *Hypociſtis Officinarum*, C. B. P. 465 *. It grows under the *Ciſtus*, being an Excreſcence from its Root, whence the Name. It bears a ſmall roundiſh Fruit, from which the Juice is expreſſed, and exhaled by the Heat of the Sun to the Conſiſtence of a ſolid Extract.

Beſides this Preparation of Hypociſtis, in the Time of *Dioſcorides* ſome macerated and boiled the dry Branches of the Plant; then ſtrained, and reduced the Liquor to an Extract by Evaporation.

Hypociſtis conſiſts almoſt of the ſame Principles as Acacia, and has much the ſame Virtues. It powerfully aſtringes, and is commended againſt all Fluxes, as Hemorrhages, Spitting of Blood, the Floodings of Women, and in the Dyſentery and cœliack Paſſion. "Moreover, (ſays *Galen on ſimple Medicines*, *l.* 7.) "if our Intention be to corrobo-"rate any Part which has been relaxed by too "much Moiſture, the Juice of Hypociſtis is high-"ly conducive to that End. For this Reaſon un-"doubtedly it is mixed with Epithems to lay over "the Stomach and the Liver, and with the Anti-"dote made of Vipers, (*viz.*) in Order that it may "ſtrengthen the Body."

It is taken inwardly from ʒſs. to ʒj. and is uſed in repellent Gargariſms as Acacia.

Take of Hypociſtis ʒij. Syrup of Comfrey and of Barberries, ā ℥j. the Mucilage of Gum Tragacanth ʒj. Plantain and Purſlain-Water, ā ℥ij. Make a Linctus, of which let a Spoonful be taken often againſt Spitting of Blood.

* According to the Catalogue of the College, *Hypociſtis ſub Ciſto*, C. B.

Take

Take of Hypociſtis ʒj. red Coral, ſealed Earth, and Blood-Stone prepared, ā ℈j. Syrup of Ground-Ivy ℥j. Plantain and Purſlain-Water, ā ℥iij. Make a Mixture to be taken by Spoonfuls.

Take Hypociſtis and *German* Acacia, ā ʒj. Conſerve of Roſes and of Hips, ā ʒij. Syrup of Barberries q. ſ. Mix them for four Doſes, and give one every fourth Hour, to ſtrengthen the Stomach, and to ſtop a Looſeneſs, after due Preparatives.

ARTIC. VII. *Of* JAPAN EARTH.

Catechu, and improperly, *Terra Japonica*, *Off.* is an indurated, gummo-reſinous Juice, externally of a reddiſh Colour tending to Black, internally of a browniſh Red. It has an aſtringent Taſte, at firſt bitteriſh, afterwards ſomething ſweet and agreeable, and is void of Smell. There are two Sorts: The one is more pure, which eaſily melts in the Mouth: The other is coarſer and droſſy, having often a Mixture of Earth, Gravel, Stones, and other heterogenous Subſtances. The firſt is more ſcarce, but is accounted better, and ought to be made Choice of when it can be met with. It is brought from *Malabar*, *Surat*, *Pegu*, and other Coaſts of the *Indies*. It is improperly called *Japan* Earth, ſince it is not found in *Japan*, unleſs brought thither from other Countries.

The Merchants, deceived by the Drineſs and Friability of this Drug, have believed it to be an Earth: But at this Time no one doubts but that it is a vegetable Juice; ſince it eaſily diſſolves in Water, and no Earth is ſeparated from it by Percolation. It likewiſe takes Flame, and burns away in the Fire, leaving few Aſhes. From the various Accounts

Accounts given of it by Authors, under the Names of *Khaath*, *Cate*, *Catechu*, *Caetchu*, *Caſtjoe*, &c. it is difficult to determine the Plant which produces it: Nay, we may conclude rather that it is drawn by Coction from many different Plants.

For if we hear *Garcias*, the Tree from which the Juice *Cate* is extracted, is as large as an Aſh-tree, with a ſmall Leaf, very like common Heath, or Tamariſk. It is ever-green and thick ſet with Thorns. The Method of extracting its Juice he relates thus. They boil the Branches of the Tree cut ſmall, and then bruiſe them; afterwards, with the Meal of *Nachani*, and with the Saw-duſt of a certain black Wood which grows there (though this is not always added) they form Paſtils and Tablets, which are left in the Shade to dry.

Bontius deſcribes the ſame Tree as having its Trunk and Branches beſet with a great Number of Thorns, with Leaves almoſt like Savin or the Tree called *Arbor Vitæ*, but not ſo fat and thick. It bears, ſays he, round Beans, wherein are included three, or, at the moſt, four Nuts, which are ſo hard as not to break betwixt the Teeth. From the Root, Bark and Leaves, an Extract is drawn by boiling, termed *Cate*, which both theſe Authors ſuppoſe to be the *Lycium Indicum* of *Dioſcorides*.

But *Herbert de Jager*, in the *Ephemerid. German. Decad.* 2. *Ann.* 3. writes that the *Lycium Indicum* or *Cate* of *Garcias*, called by the *Indians*, *Khaath*, and by the *Perſians*, *Reng*, is a Juice extracted not from one Tree only, but from almoſt all the *Species* of *Acacia*, whoſe Bark is aſtringent and reddiſh, and from many other Plants, which by boiling yield a Juice of the like Sort; and all theſe Juices are comprehended in thoſe Countries under the common Name of *Khaath*, though they differ both in Goodneſs and Virtue.

He mentions however one Tree in particular, which produces a moſt excellent *Khaath*. He defines it a *Species* of *Acacia*, by the *Indians* called *Kheir*, and by the Inhabitants of *Malabar*, *Karanggalli Patti*. It is a thorny Tree full of Branches, and covered with winged Leaves, like thoſe of the true *Acacia*, but leſs. In the Kingdom of *Pegu* its Juice is drawn out by Coction, and of this they make their *Khaath*, which is ſo famous over all the *Indies*.

Moreover, among the Trees which afford the Extract *Khaath* or *Catechu*, that called *Areca* is likewiſe remarkable according to *Herbert de Jager* in the Place above cited, and *J. Otho Helbigius*, *Ephemerid. German. Ann.* 9, & 10. It is a tall Tree, with a Leaf like the Palm, of which it is a *Species*, being called *Palma cujus fructus Seſſilis Faufel dicitur*, C. B. P. *Filfel & Fulfel*, *Avicennæ: Faufel ſive Areca Palmæ foliis*, J. B. 1, 389. *Areca ſive Faufel*, *Cluſii exot.* 188. *Pinung*, *Bontii: Caunga*, *Hort. Malabar.* 1. It grows only in ſandy Places and near the Sea Coaſts. It bears a Fruit termed *Faufel*, of an oblong roundiſh Figure like the Date, and covered, when ripe, with a thick ſmooth Membrane of a golden yellow Colour, containing a yellowiſh Pith, and an hard Kernel as large as a Nutmeg, but in ſhape for the moſt part like a Pear, or ſometimes flat on one Side and convex on the other.

The Method of procuring the Extract is this, as related by the above-mentioned *Herbert de Jager*, *Ephem. Germ. Dec.* 2. *Ann.* 3. They cut the Fruit whilſt it is green into two or three Pieces, and ſo boil it in Water with a little calcined Oyſter-ſhell for four Hours, or till the Pieces have acquired a dark red Colour, to which the *Calx* greatly conduces. Then they ſtrain the Decoction hot, and letting it ſtand to cool draw it off gently from the thick

thick Matter which ſettles at the Bottom. This Sediment inſpiſſated by itſelf goes under the Name of *Khaath*, and is uſed in the ſame manner as the Extract *Cate*; but to improve its Virtues they add to it Water, wherein the green Bark of *Kheir* or the *Acacia* laſt mentioned, bruiſed, has been macerated for three Days, and boil them together to the Conſiſtence of a ſoft Extract. Afterwards they expoſe the inſpiſſated Maſs to the Heat of the Sun upon Mats of Straw, and form it into Tablets or Paſtils.

The great and more opulent People of the Country, not content with this *Khaath* or *Catechu*, mix with it Cardamom, Aloes-wood, Muſk, Ambergreaſe, and other Subſtances, to render it more grateful to the Palate. Such is the Compoſition of a Sort of Tablets prepared among the *Indians*, in Figure round and flat, about as big as the *Nux Vomica*, which are brought into *Europe* by the *Dutch*, under the Name of *Siri Gata Gamber*. Of the ſame Kind likewiſe are the black Paſtils which come to us under different Forms, having ſometimes the Form of Pills, ſometimes of Seeds, Flowers, Fruits, Flies, Inſects, or the Dung of Mice, *&c.* Theſe are made by the *Portugueze* in the City of *Goa*, and are for the moſt Part rejected by the *French* on Account of their ſtrong aromatick Fragrancy. But as thoſe People are extremely fraudulent, they uſually mix with this Extract, Sand, Clay, and other heterogeneous Subſtances to increaſe its Weight, inſomuch that it ſeldom comes pure from their Hands.

Garcias and *Bontius* obſerve that the Fruit of *Areca* termed *Faufel*, being maſticated when unripe affects the Brain with a ſudden Giddineſs, not unlike that which is occaſioned by Exceſs of Wine. But this Alteration, upon taking a little Salt and a Draught of cold Water, preſently vaniſhes.

The oriental People commend this Maſtication againſt an offenſive Breath, to ſtrengthen the Teeth and Gums, to fortify the Stomach, to ſtop Vomitings and Looſeneſſes, to raiſe the Appetite and help Concoction. But the Mouth after chewing it has a very filthy Appearance, as if it were beſmeared with Gore.

Catechu or *Japan* Earth, when pure and without the Mixture of Aromaticks, is moderately aſtringent, corroborates the Teeth and Gums, heals the Thruſh and Ulcerations of the Mouth, cures the Quinſey and ſwelling of the Tonſils, ſtays ſpitting of Blood, reſtrains Catarrhs, is ſerviceable againſt Coughs and Hoarſeneſs, ſoftens the Acrimony of the Lymph, ſtrengthens the Stomach, helps Digeſtion, ſtops Looſeneſſes, the Diabetes and Hemorrhages, and abates the *Menſes* when immoderate. *Wedelius* in the *Ephemer. German.* gives an Account of a young Man, who by the Uſe of this Medicine was cured of a *Hernia varicoſa*.

With Reſpect to the too large Doſe of *Japan* Earth, I am of Opinion that nothing is to be feared, for Pieces of it may be held conſtantly in the Mouth, freſh ones being ſubſtituted as faſt as the others diſſolve without any bad Conſequence. It is to be obſerved, that the ſmaller the Pieces are the more agreeable they are found to the Palate. They are generally taken about as big as Aniſeed, or Coriander-ſeed.

It is uſually given in Subſtance, under the Form of a Bolus or Tablets, from ʒſs. to ʒſs. *Wedelius* draws a Tincture from it thus,

Take of *Japan* Earth powdered q. v. pour upon it ſix or eight times its Quantity of rectified Spirit of Wine; ſet them to digeſt together, and when the Tincture is drawn, pour it off gradually

gradually from the Fæces, and put it by for Uſe. The Doſe is from gutt. xx. to lx.

This elegant Tincture, as alſo *Japan* Earth in Subſtance, is ſucceſsfully uſed in Gargles againſt the Quinſey.

Take of *Japan* Earth ʒj. Sugar ℥j. powder and mix them perfectly; then with the Mucilage of Gum Tragacanth, and one or two Drops of the Oil of Cinnamon, make Lozenges or Paſtils, which may be held in the Mouth and diſſolved, in a catarrhous Cough, and Looſeneſſes.

Take of *Japan* Earth ℥ ſs. Nutmeg and red Coral prepared ā ʒj. make an Electuary with q. ſ. of the Syrup of Quinces. The Doſe is ʒj. three times a Day, in a Superpurgation, Looſeneſs and Dyſentery.

Take of *Japan* Earth ʒj. Blood-ſtone prepared ʒ ſs. Diacodium ℥ ſs. Syrup of dried Roſes ℥j. the Water of Purſlain, and of Frog's Spawn, ā ℥iij. make a Julep for a ſpitting of Blood and Hemorrhages.

Take of *Japan* Earth powdered ʒiij. Mucilage of Gum Tragacanth and Syrup of Comfrey, ā ℥j. Plantain-water ℥iij. mix and make a *Lohoch* againſt ſpitting of Blood and a catarrhous Cough.

Whether the *Catechu* of the Moderns be the ſame with the *Lycium Indicum* of *Dioſcorides* is a Doubt not eaſily reſolved: But I am inclined to think, that both the *Lycium Indicum*, and the other Sort called *Lycium Cappadocum*, are now Strangers to the Shops.

ARTIC. VIII. *Of* SUGAR.

Saccharum, *Off.* Σάκχαρον, *Dioſcor.* Σάκχαρ, *Galen.* Μέλι ἐν καλάμοις, *Theophraſ.* Μέλι καλαμίνον, *Arrian.* Ἁλς Ἰνδικὸς, *Pauli Æginet. Zuccar*, *Arab. Saccharon*, *Plin.* Sugar is an eſſential Salt, fat, oily, of a reddiſh brown Colour or grayiſh when unrefined; but when perfectly refined, of a ſnowy Whiteneſs and cryſtalline Splendour, dry and friable under the Teeth. It diſſolves in Water, and becomes thick again by boiling; is fat like Honey, and ductile into long Threads, of an agreeable ſweet Taſte, almoſt void of Smell, and is extracted from the Sugar-Cane.

It was known to the Ancients, but was not uſed among them as it is at this time with us; which indeed is evident from the Teſtimony of many Authors; though it was formerly, as at preſent, procured from different Plants, which we ſhall mention below.

Strabo, in his Geography, *l.* 15. writes expreſsly, that in the *Indies* there is a certain Reed which produces Honey without the Aſſiſtance of Bees. *Lucan* alſo witneſſeth the ſame in this Line.

*Quique * bibunt tenerâ dulces ab Arundine ſuccos.*

Likewiſe *Marcus Varro* in the following Verſes,

Indica non magnâ nimis Arbore creſcit Arundo:
Illius è lentis premitur radicibus humor,
Dulcia cui nequeant Succo contendere Mella.

Upon this Reed, *Seneca*, *Epiſt.* 85. writes thus, " It is ſaid that Honey is found in the *Indies* upon " the

* *Sc. Indi.*

" the Leaves of Reeds, and is either formed from " the Dew of the Heavens, or from the Sweet and " fat Juice of the Reed itſelf." This melleous Juice had ſometimes the Name of *Honey*, ſometimes of *Salt*, and ſometimes of *Sugar*. " There is (ſays *Dioſcorides*, when he enumerates the different Kinds of Honey) " another Kind of concreted Ho- " ney, which is called *Saccharon*; it is found in " Reeds in the *Indies* and *Arabia Felix*. It is har- " dened like Salt, being like that brittle betwixt the " Teeth." *Archigenes* ſays, that the *Indian Salt* has the Colour and Conſiſtence of common Salt, the Taſte of Honey, and the Size of a Lentil, or at the moſt of a Bean. *Galen* upon Simple Medicines, *l.* 7. writes, that *Sacchar* is brought from the *Indies* and *Arabia Felix*. " It is (adds he) a Kind of Ho- " ney, but indeed leſs ſweet than ours." *Pliny* like- wiſe relates, that *Arabia Felix* produces *Saccharon*, but that a better Sort is found in the *Indies:* That it is a Honey collected in Reeds, gummy, ſometimes white, brittle under the Teeth, of the bigneſs of a large Filberd, and uſed only in Medicines. The ſame *Pliny*, *lib.* 6. ſeems to have pointed out our Sugar-Canes which grow in the *Canaries*; when he relates from the Teſtimony of *Juba*, that in the *Fortunate Iſlands* there are Trees growing like the *Fe- rula*, ſome black, others white, and that from the Black they expreſs a bitter Water, and from the White a Water very pleaſant to drink.

From theſe Authorities it is evident, that in the earlier Ages a ſweet melleous Liquor was obtained by Expreſſion from certain Reeds; and alſo that a Juice flowed ſpontaneouſly, and concreted into hard and brittle Tears, which we may call *Native Sugar*. But it muſt be confeſſed, that no mention is found among the Ancients of Sugar made of this Juice by Art or Coction, and compacted into large Maſ-

ſes, as it is at this Time uſually brought to us. Indeed it is propable that the People of thoſe Ages were unacquainted with this Art.

Sugar therefore was known to the Ancients. But then from what kind of Reed was this Sugar or melleous Juice procured? This is a Matter of Diſpute, ſince two Kinds of Reeds which yield Sugar are now found in the *Indies* and Oriental Countries; namely, the *Arundo Saccarifera vulgaris*, the common Sugar-Cane or Reed, and the *Arundo Arboreſcens* or *Arundo Mambu* of *Riſo*, (*Mantiſſ. Aromat.* 185.) commonly called *Bambu* or *Bamboe*. From this laſt the Sugar exudes of its own Accord, though in a ſmall Quantity, drying and concreting by the Heat of the Sun, and has been for a long Time called by the *Indians Sacar Mambu:* But no Sugar is made of its Juice by Expreſſion. From the firſt the Juice is obtained by Expreſſion, and boiled to the Hardneſs of Salt: Hence the learned *Salmaſius* took occaſion to think that the Sugar of the Ancients was only the Tear of the Reed *Mambu*, relying upon the Authority of *Marcus Varro*, who compares the Reed which is full of a ſweet Juice, as to its Magnitude, to a Tree of a moderate Height; and alſo upon the Authority of *Solinus*, who (*cap.* 52. *de India*, *fol.* 58.) writes thus, "The marſhy Places produce a Reed, which "is ſo thick that being ſplit in two betwixt the "Knots, it ſerves to make Boats to ſail in: And "from the Roots thereof a Liquor is expreſſed of "the Sweetneſs of Honey." But notwithſtanding that the Paſſages here cited are to be referred to the Reed termed *Mambu*, they do not therefore exclude the common Sugar-Cane, which being replete with a more abundant Stock of Juice, muſt certainly have yielded a much larger Quantity of Sugar. Nay, I am of Opinion that this is the Cane or Reed, which

which *Lucan* in the Line above quoted, mentions under the Name of *Arundo tenera*.

Some will here aſk, why the native Sugar exuding ſpontaneouſly from the Sugar-Cane is no longer found in the Shops, or no longer brought to us? To theſe the Anſwer is eaſy; namely, becauſe at preſent very little of it is produced. In the Time of *Dioſcorides* and *Galen*, when the Method of expreſſing and boiling the Juice was unknown, and the Reeds were not cut, but ſuffered to grow for many Years, the Saccharine Juice, wherewith they were turgid, muſt neceſſarily exude from them, in the ſame Manner as Gums and Reſins flow from a great Number of Trees. Wherefore no Wonder if the Ancients had conſiderable Quantities of this native Sugar. But when the Love of Money and the Deſire of Gain taught Men the Art and Method of drawing a larger Quantity of Sugar from theſe Reeds by cutting them down and preſſing them, it became cuſtomary with the *Indians* to cut their Reeds every Year, and to plant them again. Hence therefore it happens, that as no Reeds remain for many Years to be ſufficiently replete with Saccharine Juice, the Operation of Nature is prevented, and ſo the native Sugar of the Ancients is loſt *.

They who think the Sugar of the Ancients to have been different from ours object the Teſtimony of *Pliny*, who tells us, that Sugar was only uſed in Medicines, and ſays nothing of its Uſefulneſs in Seaſonings and other culinary Purpoſes. But the

* My Author means, that it is ſo very ſcarce that none is brought into *Europe*; for that it is not quite loſt is evident from his own Words below; where he ſays, that the native Sugar of the *Arundo Arboreſcens* is ſtill known to the *Perſians*, *Turks*. &c. and alſo that the native Sugar of the *Arundo Saccharifera* is now found, according to *Piſo*, in the Province of *Rio de la Plata*.

Reaſon

Reaſon of this is, becauſe in the Time of *Pliny* the *Greeks* and *Latins* had not yet mingled Sugar with their Food, perhaps on account of its Scarceneſs, whence all that was brought to them might but barely ſuffice for their Medicines. Nevertheleſs, as we have above obſerved from *Lucan*, the *Indians* at that Time prepared Draughts of the ſweet Juice of Reeds, both to quench their Thirſt and to pleaſe their Palate.

The *Arabians* have mentioned three Sorts of Sugar, namely, *Zuccar Arundineum*, *Tabaxir*, and *Zuccar Alhuſar*.

1. *Zuccar Arundineum* of *Avicenna*, is ſaid to ouze out of Canes, and to be found upon them like Salt. It ſeems not to have differed from the Sugar of the Ancients which exuded from the Sugar-Cane. This ſame Sugar when it was found white was termed *Tabarzed*.

2. *Tabaxir* of *Avicenna*, which the Interpreters have improperly rendered *Spodium* or *Cinerem*, perhaps becauſe it ſomewhat reſembled Aſhes, is now nothing elſe among the *Perſians*, *Turks* and *Arabians*, than the *Sacar Mambu* of the *Indians* or *native Sugar* of the Ancients, which iſſued from the *Arundo Arboreſcens*. Yet I muſt confeſs, that when I conſider the Words of *Avicenna*, I greatly ſuſpect that the *Arabians* denoted by this Name, the firſt Sugar which had been boiled or had ſuffered the Action of the Fire. For he tells us, that *Tabaxir* is the *Aſhes* of certain burnt Reeds, concerning which he ſays, the following Story is commonly related; (*viz.*) that the Tops of the Reeds are ſtruck one againſt another by the Force of the Wind, and that from their mutual Colliſion a Fire is raiſed, whereby they are conſumed to Aſhes. This Fable ſeems to have had ſome Foundation of Truth; *to wit*, when Sugar was firſt brought to them boiled, and not

not well refined, but of a gray or aſhy Colour, ſuch as we now find in *Muſcovade*; it is reaſonable to ſuppoſe that this Colour impoſed upon them, and made them miſtake the Sugar for Aſhes; not that it had been burnt, but had ſuffered the Action of the Fire or had been boiled, wherein it differed from the native Sugar of the Ancients, which flowed ſpontaneouſly. However, this I only beg leave to conjecture without aſſerting.

3. *Zuccar* or *Sacchar Alhuſar* of *Avicenna*, *Alhaſſer* of *Serapio*, which is alſo called *Manna*, differs from the foregoing *Species* of Sugar both in Taſte and Virtues. *Avicenna* ſays, it is good for the Eyes, Lungs, Stomach, Liver, Kidneys, Bladder, and ſerviceable in the Dropſy; and likewiſe that it occaſions no Thirſt like the other Sorts of Sugar, becauſe it has but little Sweetneſs in its Taſte, and withal ſomething ſaline and bitteriſh.

This Sugar is not to be met with in our Shops; nevertheleſs it is no Stranger in *Egypt* and *Arabia*; ſince it is the Tear of an *Egyptian* Plant, called *Beid el oſſar*, *Proſp. Alpin. de plantis Ægypt.* 86. *Apocynum erectum, incanum, latifolium Ægyptiacum, floribus croceis*, *Herman. Parad. Bat. Apocynum Ægyptiacum lacteſcens, Siliquâ Aſclepiadis*, *C. B. P.* 303. *Beidelſar Alpini, ſive Apocynum Syriacum*, *J. B.* 11. 136. The *Egyptians* uſually call this Tree *Oſſar*, and its Fruit, which is as thick as one's Fiſt and oblong, they term *Beid el Oſſar*, that is, *the Egg of Oſſar*. It grows in ſeveral moiſt marſhy Places near the Banks of the *Nile*.

The common Sugar now uſed with us differs only according to the Degrees of its Purity, it being all extracted from the Sugar-Cane, named *Arundo Saccharifera*, *C. B. P.* 4. *Sloane Hiſt. natur. Inſul. Jamaic. fol.* 108. *Tab.* 66. *Arundo Saccharina*, *J. B.* 2. 531. *Arundo & Calamus Saccharinus*, *Tabern. Icon.* 257.

Canna

Canna mellæa, *Cæſalpin.* *Viba & Tacomurel*, *Piſon.* This Cane or Reed ariſes from a thick fibrous Root, to be eight or nine Feet high, and is two, three, or four Inches thick, according to the Goodneſs of the Soil in which it grows, and full of a white, fungous, juicy ſweet Pith. It is moſtly of a green Colour tending to yellow, but at the Joints becomes yellow, white, and ſometimes blackiſh. At each of the Joints, which are about four Fingers breadth aſunder, grow two narrow Leaves of a yellowiſh green Colour, and two Cubits long or more; and the Top of the Reed, which is furniſhed with many Leaves, produces a divided Panicle, two or three Feet in length. It grows ſpontaneouſly in the *Indies*, the *Canary* Iſlands, and the hot Parts of *America*. In the Province of *Rio de la Plata*, we are told by *Piſo*, that Sugar-Canes grow up of their own Accord to the Height of Trees, and that Cryſtals of Sugar exude from them by the Heat of the Sun.

In many other Parts of *America* it is planted, by laying oblong Pieces of it in parallel Furrows made in the Earth, and covering them. Theſe Pieces muſt have every one a Joint, for from each Joint ſprings forth a new Cane, which in eight, ten, or twelve Months from the planting, according to the Nature of the Soil, acquires a proper Magnitude to yield Sugar.

The Method of making Sugar is this. When the Canes are ripe, they are cut off near the Root and in a Joint, then are cleared of their Leaves, made up into Bundles, and carried to a Mill. The Mill is compoſed of three heavy Axles made of ſolid Wood, ſtanding erect, and bound with Iron Hoops. Betwixt theſe Axles which touch upon one another, and are turned about with great Force, either by Water or Horſes, the Canes are continually

ally inſerted, by which means they are cruſhed, and a Juice of exquiſite Sweetneſs flows from them. The Juice when expreſſed will not keep above twenty four Hours; afterwards it grows ſour, and is entirely unfit for making Sugar: But if it be kept a longer Time, it becomes good Vinegar. The Axles and Planks over which the Juice flows ought to be waſhed twice a Day, leſt the aceſcent Liquor wherewith they are moiſtened, ſhould diſpoſe that to turn ſour which runs after. The expreſſed Liquor being conveyed by wooden Pipes into a large brazen Cauldron, under which is a gentle Fire, they ſuffer it to boil a whole Day, ſometimes more ſtrongly, ſometimes more gently, pouring Water to it from time to time, in order to moderate its Ebullition. From this Juice in the firſt Cauldron they take a large Quantity of feculent Scum or Froth, which ſerves their Cattle for Food and Drink. The deſpumated Liquor is poured into another Cauldron ſtanding near the firſt, where it boils violently, during which its Impurities are removed by a large Ladle full of Holes. To purify it more perfectly they throw in a ſtrong Lye made of Wood-aſhes and Quick-lime, then ſcum it continually, and afterwards ſtrain it through Cloths. The Dregs in ſome Places ſerve the Slaves for Food. Some likewiſe make them into Wine, by mixing Water with them. The Liquor when ſtrained is poured into a third Cauldron, and boiled by an intenſe Fire to a due Conſiſtence, being continually ſcummed with Ladles, and ſtirred about to prevent its boiling over; and to cool it more effectually they lift it up with the Ladles, and let it fall again from a conſiderable Height into the Veſſels. They likewiſe at ſtated Times drop into the Liquor a little Butter or Oil; for thus its Intumeſcence is allayed immediately. It is alſo worth obſerving, that if a

ſmall

ſmall Quantity of Lemon-juice, or any other Acid be thrown in, the Sugar never acquires a ſolid Conſiſtence or granulates afterwards.

When the Liquor is boiled enough, that is, when a little of it being taken up in a ſpoon and thrown into the Air, it inſtantaneouſly concretes and forms itſelf into a ſort of Web or Feather; then it is poured out of the third Cauldron into a Pot or Copper, where it is kept with a gentle Heat till the Granulation commences. Immediately when it begins to granulate, it is poured off hot into earthen Veſſels, called Moulds, which from a broad open Baſe terminate in an open Point, which is ſtopt up with Straw or Wood. Here it is left for twenty-four Hours to concrete. Afterwards the Moulds are carried into large Buildings: Where they are ranged in order, one Row upon another, and thus are left for forty Days more or leſs; having now their ſmall Apertures unſtopt, that the Syrup or mellaginous Liquor may more freely flow from them. Then they cover the Sugar with Potters Clay, mixed up thin with Water, to the Height of three or four Fingers. The Water running gradually out of the Clay and paſſing through the Maſs of Sugar, waſhes and cleanſes it of a melleous, fat, browniſh Liquor, which it carries along with itſelf out of the Mould, through the ſmall Aperture, into a Veſſel put under to receive it; and the Clay continues dry at the Top of the Mould. The Sugar, being thus exhauſted of its Moiſture and rendered as dry as poſſible, is ſhaked out of the Moulds and broken into Pieces, of a reddiſh brown, aſhy, or whitiſh gray Colour; and is called *brown*, or *gray Muſcovade*. To be good, it ought to be of a light gray Colour, dry, not fat or unctuous, and to diſcover in its Taſte as little of an *Empyreuma* as poſſible. This crude Sugar or *Muſcovade* is not often uſed, eſpecially

eſpecially the *brown*; but it is the Matter of which all the other Sorts of Sugar are made.

The thick, fat, red or browniſh Liquor which falls from the Moulds can only be inſpiſſated to the Conſiſtence of Honey: Wherefore it is called *Syrupus Saccharinus*, *Mel Saccharinum*, *Mellago*, or *Remel*, commonly *Melaſſes* and *Treacle*. It is uſeleſs both in Food and Phyſick, and ought to be rejected. Yet ſome of the Confectioners make uſe of it, when clarified, for preſerving red Fruits; but it is unfit for that Purpoſe on account of its Taſte, which is ſomething unpleaſant. Some draw from it an *Aqua Vitæ* or inflammable Spirit. They uſually put one Part of Melaſſes to eight Parts of hot Water with a little Ale-yeaſt, and mix them perfectly together: Afterwards they ſet them to ferment in cloſe Veſſels, till a ſubtile, ſpirituous and vinous Smell exhales from them; and then draw off an ardent Spirit by Diſtillation.

The *Muſcovade* is either refined in the *American* Iſlands, or is brought over into *France* to the Sugar-Houſes; and of this are made the *Saccharum Miſcellaneum*, *Saccharum purgatum*, and *Saccharum finale* or *regium*.

Saccharum Miſcellaneum, or, as they call it, *Caſſonatum* or *Caſtonatum*, vulgarly *Caſſonade*, is a white Sugar in ſmall Lumps or Crumbles, ſomewhat fat, of a Sort of melleous Smell not unpleaſant, ſometimes approaching to the Smell of Violets, and of a ſweet Taſte ſurpaſſing that of Honey. The Apothecaries make Choice of this for preparing Syrups, Electuaries and Confections. They prefer it to other Sorts of Sugar, both on account of its agreeable ſweet Taſte, and of the elegant Whiteneſs which it gives to Compoſitions, and alſo becauſe Syrups made of it preſerve their proper Conſiſtence longer without candying. It ought to be white, dry,

dry, and of a good Smell. It is made of *Muſcovade* thus.

They throw what Quantity of *Muſcovade* they think proper into a Cauldron, and pour upon it as much of a ſtrong Lye as may ſerve for Deſpumation. Then they caſt in the Whites of a great Number of Eggs beaten up into a Froth, ſcumming and throwing in more Whites alternately, till the Syrup is perfectly clarified. Before the Moiſture is evaporated, they paſs it through a Strainer, in which it leaves all the Straws and other Impurities. Afterwards it is boiled again till the ſuperfluous Moiſture is quite evaporated. The Syrup having now acquired a due Hardneſs, they put it into earthen Moulds, which have their ſmall Aperture ſtopt, and have been firſt dipt in Spring Water; and then range them in a warm Cellar or Stove.

When the Sugar is become hard, they put upon the broad Baſes of the Moulds Tobacco-Pipe Clay, got near *Roan* in *France*, and mixed up with Water, ſo as to lie two or three Fingers deep over the Sugar. When this Covering of Clay, partly from the Heat of the Place, and partly from the abſorbent Warmth of the Sugar, is become dry, they take it off and put on another; which they repeat two or three Times, obſerving at each Time to thruſt the Point of an Iron Spindle into the ſmall Aperture of the Mould, to the End that the fat thick Liquor, commonly termed Syrup, may flow forth with greater Eaſe. The Sugar, when turned out of the Mould in the Form of a Pyramid or Cone, appearing of different Colours, they uſually divide it into three Parts; namely, into the Bottom, the Middle, and the Top: Theſe they lay ſeparately, eſteeming the Top of the Cone the worſt. Afterwards the *Caſſonade* is ſpread abroad upon large Sheets, and dried

dried in the Air; and then, being put into Caſks or Cheſts, is brought to us.

But if they intend to procure a Sugar more perfectly refined, and in a pyramidal Form, having firſt taken it out of the Moulds they diſſolve it twice or thrice in Spring-water; boil it, and pour it again into the Moulds, proceeding in the reſt as above-mentioned upon *Caſſonade:* And thus they prepare the *Saccharum pyramidale* or *Loaf-ſugar*, which is of different Sorts according to its different Degrees of Purity and Whiteneſs. The moſt excellent is that which ſurpaſſes the others in Whiteneſs, Purity, Splendour and Dryneſs, and which being ſtruck with the Finger ſounds like Marble. It is called *Saccharum finale*, becauſe it is ſo perfectly refined, that no Art can render it whiter or purer. It is termed in *French*, *Sucre fin*, (commonly *double refined)* as likewiſe *Saccharum Regium*, *Royal Sugar*, on Account of its Excellency.

Sugar was formerly diſtinguiſhed, from the Countries in which it was made, into *Maderenſe*, *Canarinum*, *Braſilienſe*, *Thomæum*, *&c.* But now all that is brought over into *France* is produced in the *American* Iſlands which are ſubject to the *French* Government, where the Sugar-Cane is cultivated in great Abundance.

Sugar-Candy, *Saccharum Candum*, *Cantum*, or *Cantium*, *Off.* Κάντι or Κάντιον, *Nicolai Myrepſi*, is a Sugar which is hard, tranſparent, and angular; whence the Name. It is twofold; the one like Cryſtal, and therefore called *Cryſtallinum*, which is made of the pureſt Sugar: The other is reddiſh or brown, and never becomes clear, being prepared from Muſcovade or Caſſonade.

It ought to be choſen hard, dry, tranſparent and cryſtalline; though ſome prefer the brown Sort,

ſuppoſing it, as being fatter, to be more efficacious in Diſorders of Lungs.

The cryſtalline Sugar-candy is made thus. Some of the pureſt Sugar is diſſolved in a ſmall Quantity of Water, and boiled to a thick Syrup. This is put into an earthen Pot, wherein are ſtuck ſome Splinters of Wood downwards and croſs-wiſe like a Kind of Lattice-work. The Pot is ſet upon a Plank in a warm Place, and there left for fifteen or twenty Days. Then the Syrup which is not candied is poured off, and all the Fatneſs remaining is waſhed out with hot Water. Afterwards the Veſſel is ſet in a warm Place for the Cryſtals to dry, and being broken the Day following, the Sticks are found loaden with Sugar-candy ſhining like Cryſtal; which is ſeparated from the Wood and Sides of the Veſſel, to which it adheres, and being well dried is put by for Uſe.

After the ſame Manner is prepared the brown Sugar-candy from Muſcovade or Caſſonade.

Saccharum rubrum. Off. commonly called *brown Sugar*, is of a reddiſh Colour or brown, ſomewhat fattiſh, and made by boiling the Syrups which remain after the refining of Caſſonade. It is ſeldom uſed in the Shops, unleſs for Clyſters.

In a chymical *Analyſis*, two Pounds of the whiteſt Sugar yielded one Ounce and thirty-ſix Grains of limpid Phlegm, void of Smell and Taſte; twelve Ounces and ſix Drachms of Liquor, both acid and urinous, which at firſt was limpid, afterward reddiſh and empyreumatick; ſix Drachms of thin reddiſh Oil; two Ounces, three Drachms and forty-four Grains of thicker Oil. The black Reſiduum in the Retort weighed eight Ounces, one Drachm and ſixty-three Grains: Which, being calcined in a reverberatory Fire for fifteen Hours, left one Ounce, one Drachm and ten Grains of brown Aſhes.

Aſhes. From theſe were drawn, by Lixiviation, two Drachms and ſixty Grains of fixt alkaline Salt. The Loſs in Diſtillation was eight Ounces and ſix Drachms; in Calcination ſeven Ounces and fifty-three Grains.

Sugar is an eſſential Salt, conſiſting of an acid Salt, an Oil and Earth. When it is perfectly refined, as in Sugar-candy, it concretes into priſmatick Cryſtals, whereof the two oppoſite Baſes are equal and parallel, and the others are Parallelograms. It gives no Marks either of an Acid or Alkali. It takes Fire, and burns with a vivid Flame: Diſſolves eaſily in watery Menſtruums, but with difficulty in Spirits and Oils. Being diluted with Water it ferments, and acquires firſt a vinous Taſte, afterwards an acid one.

A vinous Liquor may therefore be obtained from Sugar, if thus fermented, (*viz.*) diſſolve a Pound of Sugar in ſix or eight Pounds of Water, and mix well with them a Spoonful of freſh Ale-yeaſt: Set them in a warm Place in a Veſſel cloſe ſtopt, but not quite full. After a few Hours the Mixture will begin to ferment very ſtrongly, and after three or four Weeks, more or leſs, according to its Quantity and the Heat of the Place, will produce a vinous Liquor not unlike Mead. If it be diſtilled it yields a ſtrong inflammable Spirit. But if the whole fermenting Mixture be kept longer in the Heat, it ſoon changes into a ſtrong Vinegar entirely like that of Wine.

Although Sugar was known to the Ancients, yet in thoſe Ages it was but little commended, and alſo ſparingly uſed. But in Proceſs of Time its Uſe became very common both in the Shops and Kitchen; and is now imported into *Europe*, and conſumed in ſuch Quantities, that it is eſteemed one of the chief Commodities of the *new World*.

The Ancients uſed to preſerve and make up their Medicines with Honey. *Actuarius*, ſeems to be the firſt Phyſician who ſubſtituted Sugar in its Room.

Sugar taken moderately with Food affords a pretty laudable Nouriſhment. For we are aſſured that Swine by feeding upon the bruiſed Canes, from which the Juice has been expreſſed, grow ſurprizingly fat, and that their Fleſh is ſo tender and ſavoury, that it is preferred to Capon. If a Lump of Sugar be taken at the End of a full Meal, it helps Digeſtion.

Almoſt all Phyſicians commend it for Diſorders of the Breaſt and Lungs. To ſoften the Acrimony of Phlegm, to quiet Coughing, and to correct the Roughneſs of the Throat and pulmonary Tubes, it is ordered to be held in the Mouth 'till diſſolved by the Spittle; for thus it covers the Membranes of thoſe Parts, and defends them from the acrid Phlegm. It promotes Expectoration, eſpecially if made into Syrup, and mixed with Oil of Almonds or Linſeed. Being taken in the ſame Manner it allays colic Pains, and the Gripes of Children. Drinks prepared from Sugar cleanſe the Breaſt, appeaſe Coughs by ſcouring away the Phlegm, cure Hoarſeneſs, deterge Ulcers of the Lungs, provoke Urine, looſen the Belly, and are ſerviceable in the Pleuriſy and Peripneumony.

But if Sugar be taken alone and in over large Quantities, it is hurtful, particularly to cholerick Temperaments: For in theſe it ferments more ſtrongly in the Stomach and Inteſtines, excites Wind, and, by fermenting with the Bile, attenuates and renders it more fluid: For which Reaſon Sugar and ſweet Things are ſaid to produce Bile. Doubtleſs the Bile being loaded with the ſaline *Spicula* of Sugar becomes more acrimonious: Whence it

it raiſes an Heat not only in the Inteſtines, but likewiſe over the whole Body when conveyed into the Maſs of Blood. It cauſes Worms in Children. It is reckoned extremely injurious to the Teeth, ſince it makes them black, canker'd and looſe: Wherefore it is cuſtomary with prudent People, after eating it, to waſh their Mouth and Teeth well with Water.

But theſe are the leaſt Inconveniencies ariſing from Sugar immoderately uſed. *Willis*, *Simon Paulli* and *Ray* accuſe it of far greater. They aſcribe to an immoderate Uſe thereof, the Scurvy and Conſumption, the reigning Diſtempers of *England*. "And "leſt any one (ſays *Ray*) ſhould rather ſuſpect theſe "Diſtempers, which are ſo common in *England*, "to be owing to the moiſt Conſtitution of the Air; "we are told that in *Portugal*, which is a warm "Climate, the Conſumption is become epidemical "from the ſame Cauſe: For the *Portugueze* con-"ſume more Sugar than any other Nation, except "the *Engliſh*." And *Willis*, in his *Treatiſe on the Scurvy*, *c.* 10. writes thus. "I ſo far blame Things "preſerved and mixed with Sugar, that I believe "the Invention and immoderate Uſe thereof have "very much contributed to the great Progreſs "which the Scurvy has made in this laſt Age. "For that Concrete conſiſts of a Salt ſufficiently "acrid and corroſive, tho' ſoftened with Sulphur, "as is evident from its chymical Analyſis; inaſ-"much as Sugar, being diſtilled by itſelf, gives "up a Liquor little inferior to *Aqua Regia*. But "being fermented with a large Quantity of Wa-"ter, and then diſtilled, notwithſtanding that the "fixt Salt is not raiſed, yet a Liquor will be drawn "off as hot and pungent as the ſtrongeſt Brandy. "Therefore, ſince we take Sugar ſo plentifully in "almoſt all our Food, it is highly probable that "the daily Uſe which we make of it renders the "Blood and Humours ſaline and acrimonious, and

" conſequently ſcorbutick. *Theophilus de Garen-*
" *cieres*, a famous Author, (*de Tabe Anglicanâ*) im-
" putes the Cauſe of the *Engliſh* Conſumption to
" the immoderate Uſe which we make of Sugar:
" But I know not whether the Increaſe of the Scur-
" vy may not, with greater Reaſon, be aſcribed to
" it." So far *Willis*.

Nevertheleſs *Frederick Slare*, a Phyſician of *London* and Fellow of the *Royal Society*, anſwers theſe Arguments very well in his *Vindication of Sugar*. 1. Says he, the Scurvy was ſpread abroad in the Northern Countries long before Sugar was brought thither. Beſides, that Diſeaſe is more common among the Poor who very ſeldom make uſe of Sugar, than among the Rich with whom its Uſe is frequent and familiar. 2. As to the Conſumption, which *Theophilus de Garencieres* calls *Flagellum Angliæ*, (*the Scourge of* England,) it is evident that the Air of *London*, vitiated by the Smoke of foſſil Coal, is the primary Cauſe of that Diſeaſe; ſince it is often cured, during its firſt Stage, by change of Air only. Moreover, the epidemick Conſumption of *Portugal* ought not to be imputed ſo much to the Abuſe of Sugar, as to the almoſt continual eating of Acids, if *Slare* himſelf had not aſcribed it to a certain venereal Virulency.

But they who are diſpleaſed with ſweet Things object, that Sugar contains at leaſt an acid Salt, which is extremely corroſive, and conſequently hurtful to the Body. We muſt indeed confeſs that there are in Sugar very powerful acid *Spicula*, which are ſet at liberty by Fermentation, or ſeparated from the other Principles by Diſtillation, though not in ſo great a Quantity as they are drawn from Nitre or Vitriol: But we are not therefore to conclude that this Acid renders Sugar hurtful. For if that Argument were of any Force, Mankind could take no Food

Food without Injury; ſince we have no alimentary Compound, wherein this acid Principle is not to be met with. Is not the ſame Acid found in Muſt and Wine, and even more copiouſly? Is it not likewiſe contained in Barley and in Beer, in Wheat and Bread, and in all Fruits whatſoever, diſcovering itſelf evidently by Fermentation, or the Action of Fire? And are theſe Aliments, for this Reaſon, ſuppoſed to have bad Qualities, or accounted injurious to Health? By no Means. An inflammable Spirit, is drawn from Sugar duly fermented, as from other vegetable Juices; but it is not therefore the worſe Food: Nay, on the contrary, by this ſame Spirit the moſt powerful, corroſive, acid Liquors are tempered and ſoftened. In Sugar then, as in Milk, and other Aliments derived from Vegetables, the Acid is ſo intangled and enveloped in oily and earthy Particles, that from their Mixture reſults a moſt agreeable ſalutary Food, or Seaſoning; and not a corroſive pernicious Subſtance, as ſome Authors (who otherwiſe have rendered good Service to Phyſick) have a little too inconſiderately advanced. Dr. *Slare* commends it on many Accounts. He extols it as a bechick and ſtomachick Medicine, cheering the Heart and Brain; which is alſo ophthalmick, ſternutatory, vulnerary, and adontalgick. He rubbed his Teeth with nothing but the whiteſt Sugar, which preſerved them ſound and white for many Years, contrary to the Notion of thoſe who aſſert, that it diſpoſes the Teeth to corrupt and canker. He attributes to it a balſamick Virtue, whereby it preſerves the Bowels from Putrefaction, as by the ſame Property it keeps Flowers, Roots, Fruits, and the other Parts of Vegetables, or Animals, a long Time entire and uncorrupted. Theſe extraordinary Virtues he confirms by two remarkable Obſervations: The one concerning the *Duke of Beau-*

fort, an illuſtrious *Engliſhman*, who died about ſeventy Years old of a Fever, and who uſed to eat a Pound of Sugar or more every Day for almoſt forty Years together. His Teeth were whole and faſt, and his Body being opened, his Bowels appeared perfectly ſound and free from Injury. The other Obſervation is of one Mr. *Malory*, the Doctor's own Uncle. This Gentleman was very fond of Sugar and Honey. With theſe, eſpecially with Sugar, he ſeaſoned all his Food, whether Fleſh or Fruits; and he lived to an hundred Years ſound and healthy.

Hence we may conclude, that nothing is to be feared from a moderate Uſe of Sugar. On the contrary I am of Opinion, that as a Seaſoning, it gives an Agreeableneſs to Aliments, which diſpoſes the Stomach to a due Performance of Digeſtion; that it likewiſe helps the Ferment of the Stomach, and prepares the Food to undergo the Fermentation which is requiſite both in the Stomach and Inteſtines; and therefore that it conduces to an excellent *Craſis* of the Blood, and of all other Humours depending upon the firſt Digeſtion.

And ſo far is it from deſerving to be thought the Cauſe of a pulmonary Conſumption, that many experienced Phyſicians have extolled a Preparation of it with Roſes, termed *Saccharum Roſatum*, as a ſovereign, or even ſpecifick Remedy, in that Diſeaſe. *Montanus*, *Valeriola* and *Foreſtus* aſſure us, that they have ſeen ſome Perſons cured by taking it plentifully. *Riverius* likewiſe, *cap. de Phthſi*, tells us, he knew an Apothecary, who being in a Conſumption, prepared for himſelf a large Quantity of *Saccharum Roſatum*, of which he kept continually eating; and by this Remedy alone was reſtored to Health.

Yet we muſt obſerve, that Phyſicians unanimouſly agree, that bilious, melancholick, and ſcorbutick

butick People ought to abſtain from it; as alſo hyſterical Women. For it readily ferments, and augments the Heat and Effervescence of the Humours, and renders the Symptoms of thoſe Diſorders more grievous.

Externally Sugar is an excellent Vulnerary, reſiſting Putrefaction, eſpecially if diluted with a little Brandy. The *Turks*, ſays *Etmuller*, uſually waſh their freſh Wounds every Day with Wine. After which they ſcatter upon them powdered Sugar; and ſo cure themſelves after a neat Method.

Sugar when diſſolved in Brandy is ſometimes called *Oleum Sacchari*, and is thus commended to promote Expectoration; and externally applied is accounted good to agglutinate Wounds, to cleanſe and deterge Ulcers, and to remove Putrefaction.

Sugar-Candy, or white Sugar, finely powdered and blown into the Eyes, reſolves an *Albugo* or Pearl of the *Cornea*. It does the ſame if diſſolved in the diſtilled Water of Eyebright, Celadine, or Fennel. It likewiſe deterges Ulcers of the ſame Part, and heals them. If it be thrown upon Gledes and the Smoke received by the Noſtrils, it reſtrains Defluxions of the Head.

There are many Preparations of Sugar, as the *Saccharum penidium*, *hordeatum*, and *Roſatum*, &c. In a Word it is an Ingredient in almoſt all compound Medicines for internal Uſe, and is therefore abſolutely neceſſary in the Shops.

Some draw from it by Diſtillation a Spirit and empyreumatick Oil, but they are hardly ever called for in Practice.

Beſides the common Sugar, another Sort is brought to us from *Canada*, a northen Province of *America*, where it is obtained from ſome *Species* of the *Acer*; the Chief of which is the *Acer montanum candidum*, *C. B. P.* 430. *Acer major multis*, *falſo Platanus*,

Platanus, *J. B.* I. 168. *Acer major*, *Dodon. Pempt-tad.* 840. It is a tall beautiful Tree. It grows in moiſt and mountainous Places, flowers in *May*, and its Fruit is ripe in *September*.

In the Beginning of Spring, when this Tree is full of Buds, before the Leaves are unfolded, Inciſions being made into its Trunk, Branches or Roots, a ſweet potulent Juice flows plentifully from them; as alſo in Autumn, when the Leaves are fallen, and during the whole Winter-ſeaſon. The Taſte of this Juice is very much the ſame with that of Sugar. The Inhabitants of *Canada*, wounding the Trees towards the End of Winter, catch the Juice, and prepare from it Liquors to drink. They likewiſe boil it into a Sugar not unlike that of the Sugar-Cane. From eight Pounds of the Juice there remains one Pound of brown Sugar, which may be refined to Whiteneſs in the ſame Manner as common Sugar.

Of this Sugar well deſpumated, with the Leaves of the *Maiden-hair of Canada*, they make a Syrup, which many People, even in *France*, greatly eſteem for Diſorders of the Breaſt.

Moreover, not only terreſtrial Plants afford Sugar, but alſo marine Plants. *Olaüs Borrichius*, in the *Acta Hafnienſia* for the Years 1671 and 1672, makes mention of a certain *Species* of *Alga*, found upon the Shore of *Iſeland*, which yields Sugar. "There grows (ſays he) in the Sea of *Iſeland* a *Spe-* "*cies* of *Alga*, which no Author, that I know of, "has deſcribed; nor yet is it much unlike the nar- "row-leaved *Alga* of Glaſs-makers, (*Alga anguſti-* "*folia Vitriariorum*, *C. B.*) except that its Leaf is "yellowiſh, and ſomething fatter. When this "Plant has been caſt upon the Shore by the Waves "of the Sea, and has lain there for ſome Time, "the Heat of the Sun gradually draws forth its

" Juice, and it becomes loaded here and there with " ſaline Grumes; which being of a delightful ſweet " Taſte, are carefully collected by the Inhabitants, " and made uſe of in the Place of Sugar. They " likewiſe gather the Plant freſh, before any Sugar " appears upon it, and eat it at their Tables with " Salads, wherein it is not unpleaſant.

ARTIC. IX. *Of* TARTAR.

Tartarus and *Tartarum*, *Off.* Tartar is an hard, ſaline Subſtance, of a ſubauſtere acid Taſte, adhereing to the Bottom and Sides of Wine-caſks. There are two Sorts, (*viz.*) the *White* and the *Red*.

White Tartar is ſcraped off the Sides of Caſks, wherein White Wine has ſtood a long Time. It comes to us from *Germany*. Red Tartar is got from Caſks in which Red Wine has been kept, and is brought from *Provence* and *Italy*.

White Tartar is preferred, being freer from Earth. It is made Choice of heavy, hard, and, on its Surface which touches the Wine, rough with many Points like Cryſtals; and when broken not appearing porous, like a Spunge or Pumice-ſtone, or full of Earth, but of a denſe, ſolid, ſhining Subſtance.

The Ancients made no Diſtinction between *Tartar* and the *Fæces* or Dregs of Wine. Indeed they have the ſame Origin, nor do they differ greatly from each other. For the Dregs are Tartar or the eſſential Salt of Wine attenuated by Fermentation into a turbid Sediment, and diſſolved by a ſpirituous Liquor; which they afford more plentifully in Diſtillation than the Wine itſelf. So that Tartar only differs from the Dregs in containing more Earth, and leſs Spirit.

Tartar is ſeldom given inwardly, unleſs purified from a good Share of its Earth, by diſſolving it in boiling

boiling Water, and afterwards ſetting it in a cool Place to cryſtallize. It is then called *Cryſtals* or *Cream* of Tartar; which Names were formerly aſſigned to two different Preparations, but are now indiſcriminately given to this one.

Tartar is compounded of an acid Salt, an Oil, and an Earth; yet ſo that the Acid predominates. It is very difficultly ſoluble except in boiling hot Water, on Account of the oily Parts in which the Saline are involved. The acid Salt, by the Means of Fire or Fermentation, is converted into an alkaline Salt, either fixt or volatile.

Both Tartar and its Cryſtals allay the Effervescence and Heat of the Bile, abate Thirſt in ardent Fevers, reſtore the Appetite, attenuate, reſolve and gently evacuate thick vitiated Humours, and open Obſtructions of the Bowels: Wherefore they are commended againſt Obſtructions of the Liver, Spleen and Meſentery, in cachectick and hypochondriack Affections. They are ſucceſsfully mixed as *Stimuli* with the weaker laxitive Medicines. *Angelus Sala*, in his *Tartarologia*, tells us, that he himſelf being miſerably tormented with the Colick, and having tried many Remedies to no Purpoſe, he took ʒvj. of Tartar in Powder, by which he was purged and eaſed of his Pains; and at length, after repeating the ſame a few Times, was perfectly cured.

Cream of Tartar is given from ʒſs. to ʒij. to open only, or to ſerve as a *Stimulus* to other Medicines; but if given as a Purge by itſelf, the Doſe is from ℥ſs. to ʒvj. or ℥j. It is taken in the Form of an Electuary, Bolus, or Pills. If preſcribed in Broths or Potions, it ought to be put into them when boiling, otherwiſe it will not diſſolve.

It is advantageouſly joined with Chalybeates, aſſiſting them very much in reſolving Obſtructions; and

and is therefore frequently uſed in meſenterick and cachectick Compoſitions.

Take of Cream of Tartar ʒij. Diagrydium gr. iv. Make a purging powder for a Cachexy.

Take Cryſtals of Tartar and Sena, ā ʒij. Cinnamon ʒiij. Cloves ʒſs. Mix and make a Powder to purge gently and open Obſtructions. The Doſe is from ʒſs to ʒij.

Take of the Ruſt of Iron prepared with *May*-Dew gr. xv. Cream of Tartar ℈j. Saffron gr. iij. Cinnamon ℈j. Make a Powder to be given twice a Day in a Green-ſickneſs, and Cachexy.

Take of the *Peruvian* Bark ℥j. Cream of Tartar ℥ſs. Jalap in Powder ʒſs. Syrup of Wormwood q. ſ. to make an Electuary, of which ʒj. or ʒiſs. may be taken three or four Times in a Day, in cachectick, intermitting Fevers, attended with an *Œdema* or *Leucophlegmacy.*

Take Cream of Tartar ʒv. Red Roſes dried and powdered ʒj. Make a Powder, to which add a few Drops of the Spirit of Vitriol. The Doſe is ℥ſs. in intermitting Fevers, to temper bilious Humours in the Stomach, to remove a Nauſea and want of Appetite, to correct Bitterneſs of the Mouth, and to aſſiſt Digeſtion.

Many Medicines are prepared from Tartar by the Chymiſts, the Chief of which are the following *.

1. A *Spirit* and *fœtid Oil.* The Spirit is diuretick and diaphoretick, and for opening Obſtructions is extolled by the Chymiſts as a *Panacea.* The Doſe is

* I ſhall ſpare myſelf the Pains of tranſcribing from our Author the Proceſſes by which theſe Medicines are made, becauſe they are all to be found in our common Diſpenſatories.

is from ℈j. to ʒj. The Oil by repeated Diſtillations, either with Quick-lime or Water, loſes its fœtid Smell, and becomes agreeable. Internally it provokes Sweat. Externally it powerfully reſolves Tumours, is ſerviceable againſt the Rheumatiſm and Palſy, and is commended againſt Diſeaſes of the Skin.

2. A *fixt Salt*; which is made by calcining Tartar in an open Fire, or alſo the Reſiduum after the Spirit and Oil are drawn off. This fixt Salt of Tartar is an extremely acrimonious and cauſtick Alkali: Wherefore it is ſeldom uſed inwardly, though ſome account it diuretick. In many chymical Operations it is very ſerviceable; particularly in drawing Tinctures from reſinous and ſulphureous Compounds. Sometimes it is mixed with Purgatives, as well to unfold their ſulphureous Parts, as to help their Action by attenuating the Humours. It is preſcribed from gr. xij. to ʒſs. but ought always to be diſſolved in a large Quantity of Water, leſt its Acrimony ſhould hurt the Membranes of the Throat and Stomach. If it be ſet in a damp Place, it runs in a ſhort Time, by the Moiſture of the Air, into a Liquor, which is called *Oleum Tartari per Deliquium*. Moreover, from Salt of Tartar is drawn a Tincture by the Means of Spirit of Wine, which ſome greatly commend. It contains ſome of the alkaline Parts of the Salt, with ſome oily ones; and therefore is proper to incide viſcid and tenacious Humours upon the Coats of the Stomach, in the Kidneys, or Glands of the Meſentery. It is given in any ſuitable Vehicle from gutt. x. to xxx. It likewiſe ſerves to extract ſulphureous and oily Tinctures from Vegetables and Minerals.

3. A *volatile urinous Salt*; which is drawn either from Tartar, moiſtened and fermented; or from the Lees of Wine; or from the fixt Salt of Tartar

tar digeſted for ſome Months in a gentle Heat with the fœtid Oil. This volatile Salt agrees in Virtues with thoſe drawn from Animals.

Other Preparations of Tartar much uſed in common Practice are theſe.

1. *Terra foliata Tartari*, or *the foliated Earth of Tartar*, which is wonderfully commended by the Chymiſts for extracting the Tinctures of Metals. It is moreover extolled as a moſt excellent Remedy for reſolving Obſtructions of the Bowels, and attenuating thick Humours: Wherefore it is advantageouſly given in cachectick Affections, in the Palſy, and Dropſy.

2. *Soluble Tartar*, called alſo *Sal Vegetabilis*, which is aperient and looſening, and very ſerviceable in Cachexies and Obſtructions of the Bowels. It increaſes the Force of purging Medicines, and is therefore often mixed with them in Potions. The Doſe is from ℈j. to ʒij. or even ſometimes to ʒvj. or ℥j. If it be preſcribed in ℔ij. of an Apozem or Broth, it purges without Uneaſineſs.

3. *Vitriolated Tartar*, which has much the ſame Virtues with *ſoluble Tartar*, and may be given in the ſame Doſe. It is frequently uſed in aperient, alterative, and cathartick Medicines, both liquid and ſolid.

4. *Emetick Tartar*, which far excells all other Vomits prepared from Antimony. It is preſcribed from gr. ij. to viij. and is eaſily taken under any Form whatſoever.

5. *Chalybeated Tartar*, termed *Tartarum Chalybeatum ſolubile*. This is a good Deobſtruent, and may be given from gr. x. to ʒj. in a proper Vehicle.

CHAP.

CHAP. IX.

Of Subſtances growing upon Plants.

ARTIC. I. *Of* AGARICK.

AGARICUM and *Agaricus*, *Off.* Ἀγαρικὸν, *Græcor. Agaricus ſive Fungus Laricis*, *C. B. P.* 375. Agarick is a fungous Subſtance, formed into roundiſh, angular, uneven Lumps, ſometimes ſmaller, ſometimes greater, being as big as a Man's Fiſt or Head, very light, of a white Colour like Snow, crumbling into Powder when rubbed betwixt the Fingers, interwoven with a few Fibres, and covered with a callous, gray, reddiſh Bark. [The lower Part of which is pierced ſometimes with large and ſometimes with ſmall Perforations, wherein are found ſticking ſome extremely minute Seeds.] Its Taſte at firſt is ſweetiſh, ſoon after bitter, acrid, and nauſeous, with a certain gentle Aſtringency. It grows upon the Trunks of Larch-trees, ſeldom upon their Branches. *Herman* obſerves, that theſe Trees, when Agarick grows upon them, no longer yield Turpentine.

It is choſen white, light, and friable. When it is heavy, blackiſh, and leſs friable, it is rejected. That is likewiſe diſapproved which grows next the Stump of the Tree, becauſe it contracts a Blackneſs from the Bark; and beſides is commonly moiſter, and conſequently leſs friable. The Bark alſo is thrown away as uſeleſs or hurtful.

Dioſcorides and *Pliny* diſtinguiſh two Sorts of Agarick, (*viz.*) the *Male* and *Female*. The *Male* is round and every where ſimilar, and according to *Pliny* more criſped and bitter. The *Female* has ſtreight Veins within like the Teeth of Combs, and

making as it were Partitions. The *Female*, according to *Pliny*, is more ſoluble, of a ſweet Taſte at firſt, which ſoon after turns to Bitterneſs: And this is preferable. The Shops, however, at preſent, have no Regard to theſe Diſtinctions. They chuſe the more white and light, and call it the *Female*; as they call the ponderous and black Sort the *Male*. It is alſo called *Agaricus pedis equini facie*, *Inſt. R. H.* 562. *Fungus in Caudicibus naſcens unguis equini formâ*, *C. B. P.* 372. *Fungi igniarii*, *Tragi*, 943. This is not uſed in Medicines, but is of ſome Service in dyeing. It grows upon the old Trunks of Walnut-trees, Oak-trees, and others, of a callous, woody Subſtance in its Circumference, compoſed of ſtreight Fibres, in the Middle ſofter, externally of a cineritious Colour, internally more obſcure, tending to brown. It is rendered ſofter, and very ſuſceptible of Fire in the following Manner. It is boiled in a Lye, and when dry pounded: Then it is boiled again in a nitrous Water, and dried.

Our Agarick is the ſame with that of the Ancients, though *Salmaſius* thinks otherwiſe. The ancient *Greeks* were uncertain whether it was a Root, or a *Fungus* ariſing from the Putrefaction of Trees. *Pliny* and *Meſue* judged it to be of the fungous Kind: For they thought that Agarick and fungous Bodies had the ſame Origin, believing them to be produced from large Trees when they began to rot or grow old; ſo that they imagined Agarick to ariſe from Putrefaction, like an Impoſthume. *Pliny* in particular relates, that it is found upon Trees in *Gaul*, which bear a Fruit in the Figure of a Cone. *Braſſavolus* and others write, that they have ſeen Agarick growing upon Oaks, Firs, and Pitch-trees. But *Matthiolus* and *Bellonius* declare, that they never ſaw it upon any other beſides the Larch-tree; and without Doubt, it is the *Fungus* of this Tree. For

the fungous Productions which grow to Oaks or other Trees, are *Species* of Agarick, differing in Colour, Form, and Virtues, from the genuine Agarick of the Shops.

Dioscorides says, that Agarick grows in *Agaria*, a Province of *Sarmatia*; whence is derived its Name. But at this Time it is gathered upon Larch-trees in *Dauphiny*, the *Alps*, and other Mountains.

In a chymical *Analysis*, three pounds eleven ounces of the whitest Agarick yielded sixteen Ounces, four Drachms and thirty-four Grains of Liquor, at first merely aqueous and transparent, then reddish and acid, afterwards brown, empyreumatick, and burning the Tongue like Pepper; two Ounces, six Drachms and thirty-six Grains of reddish urinous Liquor full of a volatile Salt, and a very little acid; sixteen Ounces, six Drachms, twenty-five Grains of fluid Oil. The black, dense, hard *Residuum* in the Retort, weighed twelve Ounces: Which being calcined in a Crucible for 19 Hours, left one Ounce, three Drachms of reddish brown Ashes; from which were drawn, by Lixiviation, two Drachms of fixt Salt merely alkaline. The Loss of Parts in Distillation was ten Ounces, six Drachms and sixty Grains; and in Calcination ten Ounces, five Drachms went off in Smoke and Flame.

From this *Analysis* it is evident, that Agarick consists of a tartarous and ammoniacal Salt, joined with a large Quantity of Oil, and a very small Portion of Earth: Which Principles are so combined, as to constitute a Salino-resinous Compound; forasmuch as two Ounces of Agarick afforded, by the Means of Spirit of Wine, six Drachms and a half of a resinous Extract, of an unpleasant nauseous Taste. Though Water dissolves and extracts very little from Agarick, but converts it into a slimy or mucilaginous Matter: Hence it appears that Infu-

sions

ſions and Decoctions of Agarick in watery Menſtruums are of little Uſe. Nevertheleſs, an Infuſion of it in Water turns blue Paper, purple. The purgative Virtue of this Medicine ſeems to be chiefly owing to that Spirit or thin burning Oil, which ariſes in the firſt Portions of Liquor; from whence alſo proceeds its acrimonious Taſte.

Dioſcorides and *Galen* with the ancient *Greeks*, commend Agarick for many different Diſtempers; but eſpecially for the Jaundice, Epilepſy, Aſthma, Sciatica, and Gout; and have touched but ſlightly on its cathartick Virtue: So that there is room to conjecture, that the Ancients employed Agarick, not ſo much for purging, as for inciding and opening. *Avicenna* likewiſe, among the *Arabians*, commends it as an inciding and digeſtive Medicine, if taken in a ſmall Quantity with a little Opium. Moreover it was allowed to have an anthelminthick and alexipharmack Quality; and on this Account is an Ingredient in *Venice*-Treacle, and other alexipharmack Compoſitions, as may be ſeen in *Scribonius Largus:* Yet many of the *Arabians* reckoned it among Evacuants. The Moderns now rank it among purging Medicines and commend it chiefly to evacuate Phlegm; perhaps for this Reaſon, becauſe the Excrements after taking it are commonly white. They uſe it as a Cathartick in many purging Compoſitions. They likewiſe give it to render the Serum fluxil, when tending to coagulate, and to prepare it for Excretion. Hence it is accounted ſerviceable in catarrhous Diſorders, the *Coriza* and other Defluxions; in an Aſthma, Cough, and Cachexy; in the *Fluor albus*, Suppreſſion of the monthly Purgations, and in quotidian and ſlow Fevers, if owing to a Congeſtion of crude Humours. It is given indifferently to ſtrong and weak, to young and old People, as alſo to breeding Women; and

that without any Danger, provided that the Nature of the Diſeaſe require it.

Some Authors deny it a cathartick Quality. For *Maſſarias* aſſerts, from his own Experience, that an Infuſion of Agarick has no purgative Virtue. Indeed Water extracts very little from Agarick, as we have above obſerved. But yet in Subſtance it looſens the Belly, though weakly; and for this Reaſon it is joined with other purging Medicines, which it greatly helps, by attenuating and inciding the thick and tenacious Humours.

C. Hoffman thinks that the alexipharmack Quality, aſcribed to it by the Ancients, is very little, if any: And I am of Opinion, that if it conduce any Way to the Operation of the Ingredients in *Venice*-Treacle, and other Antidotes, it is by inciding and deterging.

Moreover, many Obſervations of Phyſicians make appear, that Agarick has its Inconveniencies and Dangers. Theſe three Faults are obſerved in it. 1. That it oppreſſes and hurts the Stomach; whence a *Nauſea* and Vomiting. 2. That it diſtends the Bowels; whence an Intumeſcence of the *Hypochondria* and *Abdomen*, and ſometimes an Inflammation. 3. That its Operation is very ſlow; and therefore it affords but little Relief to the Patient. For theſe Reaſons *Daniel Ludovicus* rejects it from his *Myrothecium*. But a Medicine highly commended by the Ancients, and frequently and advantageouſly uſed by the Moderns, is not to be deſpiſed. It muſt indeed be cautiouſly made uſe of and ſeaſonably. Catarrhous Affections, for which it is chiefly extolled, ought to be free from a Fever, and ſuch as require a Medicine of this Kind, to attenuate and liquefy the ſizy and concreted Serum. The ſame may be ſaid of Diſorders of the Breaſt, ariſing from Infarctions of the Lungs, eſpecially of an Aſthma and difficult Reſpiration. In acute Diſtempers, or where Bile

of either Sort predominates, it muſt be avoided; and likewiſe where the Blood is too active, and the Bowels over hot; of which Temperament are many melancholick, bilious, conſumptive, and hyſterical People, as the learned *Doctor Hecquet*, in his *MS. Treatiſe of Purgatives*, hath well obſerved.

In Decoction or Infuſion Agarick hath very little Virtue. In Subſtance it operates more effectually. It is preſcribed in Powder, or prepared under the Form of Troches, from ʒſs. to ʒiſs. or ʒij. and in Decoction or Infuſion from ʒij. to ℥ſs.

The Ancients tried to correct the Faults and Inconveniencies of this Medicine by hot Stomachicks, and Aromaticks, particularly Ginger; by inciding Subſtances, as Sal Gem and Oxymel, whereby its Acrimony is blunted. The Moderns correct it after various Ways. Many are afraid of it in Powder by Reaſon of its Lightneſs, which makes it ſtick to the Coats of the Gullet and Stomach: They therefore take it in Troches. But who, pray, could every ſwallow this dry Powder alone? If it be mixed with any Liquor, or Syrup, it will no longer cleave to the Membranes of the Stomach, at leaſt not ſo readily. Some, to moderate or exſtinguiſh its emetick and dangerous Quality, burn it: But by this Method it is deſtroyed, and converted into an inert Earth or Coal. Others propoſe the reſinous Extract as preferable to the Powder: But its Taſte is very ungrateful and nauſeous, and hurts the Stomach and Inteſtines more than the Powder; ſo that the Correction is worſe than the Drug itſelf.

In fine, no Preparation of it is ſafer than that of Troches, wherein its ungrateful nauſeous Taſte, and its Acrimony ſo injurious to the Stomach, are corrected by Aromaticks.

Some, by mixing with Agarick different Ingredients, according to their different Intentions, think

to direct its Virtue to this or that particular Part. Thus, that its Efficacy may be carried to the Head, they add *Arabian* Stæchas, Nutmeg, Aloes-wood, and Spikenard. They lead its Virtue to the Breaſt by Maiden-hair, Orris-Root, and Hyſſop; to the Liver by Succory; to the Spleen by the Bark of Tamariſk and Spleen-wort; to the Womb by Feverfew and Myrrh; to the Bladder and Kidneys by the five opening Roots. In what Light theſe Directions ought to be regarded, they will eaſily judge, who are not too cloſely attached to the School of the *Arabians*.

The Troches of Agarick, in the Shops of *Paris*, are prepared thus.

Take of white Ginger bruiſed ʒij. White-wine ℥iv. Macerate them together cold for twenty-four Hours, and afterwards ſtrain the Wine; then,

Take of choice Agarick raſped, and reduced to a very fine Powder ℔ſs. moiſten it with the above-mentioned Wine, ſo as to bring it into a Maſs; of which make Troches, and lay them in the Shade to dry.

Take of the Decoction of Agrimony and Saxifrage ℥vj. the Troches of Agarick, and the ſolutive Electuary of Citron, ā ʒij. Syrup of Peach-Bloſſoms ℥j. Make a Potion.

Take Sena, Troches of Agarick, and Turbith, ā ʒj. Cinnamon bruiſed ℈j. Salt of Tartar gr. xv. Infuſe them a Night in ℥vj. of River-water. In the ſtrained Liquor diſſolve ℥j. of the Syrup of Buck-thorn, to make a Potion for a Dropſy.

Take of the Troches of Agarick ʒj. Jalap powdered, and waſhed Aloes, ā gr. xij. dulcified Mercury ſublimate gr. x. the diſtilled Oil of Amber

Amber gut. ij. of Marjoram gut. j. Conſerve of Sage-Flowers q. ſ. to make Pills, for catarrhous Diſorders.

ARTIC. II. *Of* GALLS.

Gallæ, *Off.* Κηκιδες, *Græcor. Hafs* and *Hafas*, *Arab.* Galls are Bodies growing upon Oak-trees, of which there are many Kinds, differing in Magnitude, Colour, external Roughneſs or Smoothneſs, and Figure. They grow indeed to Oaks or glandiferous Trees, but not in all Countries; ſince they are not found in the colder Climates. For *Ray* obſerves, that the *Engliſh* Oak never bears any; for which he gives this Reaſon, (*viz.*) becauſe the Inſects to which they owe their Origin are not met with there. They are not the Fruit of a Tree, as ſome imagine; but preternatural Tumours, occaſioned by the biting or boring of certain Inſects. For theſe Inſects, and particularly certain Flies pierce the Buds, Leaves, and younger Twigs of the Tree: [They tear the tender Veſſels, and the Juice flows from them: It arrives more abundantly at the Part, becauſe the Reſiſtance is diminiſhed; and the Veſſels, from a greater Quantity of Juice, are more and more enlarged.] Whence Tumours of various Forms; which, though preternatural with reſpect to the Tree, are yet ordained by Nature, to be as it were *Matrices* to receive, preſerve, and cheriſh the Eggs of theſe Inſects; to hatch their Brood, and nouriſh them. When Galls are opened, perfectly ripe and freſh, ſome ſmall Worms, or rather *Nymphæ*, are found in the Middle. Sometimes we find but one, ſometimes many in ſeparate Cells; which after ſome Time become Flies, of the ſame Kind, or ſometimes of different Kinds. Soon after they attempt to open for themſelves a Paſſage, by gnawing the Subſtance of the Gall, and at length

make a round Hole in its Surface, through which they creep out, and fly away. If the Gall be not pierced, we find in it a Worm or Fly: But if it be pierced, it is found empty, or full of other *Animalcula* which have accidentally lodged themſelves in it.

In the Shops are two Sorts. 1. *Oriental* or *Aleppo* Galls. 2. *European* Galls. The *Aleppo* Galls are roundiſh, of the Bigneſs of an Hazel-nut or Filberd, angular, ſmoother or rougher, having ſometimes few, ſometimes many Protuberances, ponderous, of a whitiſh, green, or blackiſh Colour, within denſe and reſinous, and of an aſtringent and acerb Taſte. The *European* Galls are round, of a reddiſh Colour or reddiſh yellow, ſmooth on their Surface, light, eaſily broken, of a rare Subſtance, fungous, and ſometimes hollow. They are inferior to the Oriental, both for dyeing and for Medicines. Theſe two Sorts were diſtinguiſhed by the Ancients: The former they called ὀμφακίτις; the latter ὀνοχηκὶς.

In a chymical *Analyſis*, five Pounds of dry *Aleppo* Galls, yielded eight Ounces, ſeven Drachms and a Half of Liquor ſomewhat yellow and ſub-acid; ſix Ounces, ſeven Drachms of reddiſh, acid Liquor, a little empyreumatick; fourteen Ounces and two Drachms of brown, ſaltiſh, acrid, empyreumatick Liquor, both acid and urinous; two Ounces, five Drachms and fifty-four Grains of thick Oil, of a Conſiſtence like Pitch, and ſomething fœtid. The black Maſs remaining in the Retort weighed twenty-eight Ounces, five Drachms and fifty-four Grains; which being calcined left two Ounces and two Grains of brown Aſhes; from which were got, by Lixiviation, ſeven Drachms and fifty Grains of fixt alkaline Salt, extremely acrid. The Loſs in Diſtillation was one Pound, two Ounces and four Drachms;

Drachms; in Calcination twenty-six Ounces, five Drachms and fifty-two Grains. It appears from this *Analysis*, that Galls contain a large Quantity of thick fixed Sulphur, combined with an ammoniacal Salt.

Moreover, Galls turn a Solution of Vitriol black or rather of a deep purple. For the alkaline Salt of the Galls joining itself to the vitriolick acid Salt, separates from it the metallick Parts: Which then subside not to the Bottom; but are united with the sulphureous Particles of the Galls floating in the Liquor, and are sustained by them. By this Property an Infusion of Galls serves Chymists and Naturalists to try Mineral Waters: For if they contain a vitriolick Salt, or any Thing of Iron or Copper, it renders them black, violet-colour'd, purple, or tending thereto, according as they are more or less loaded with the metallick Salt.

Galls are powerfully astringent: Wherefore they are commended by many in Dysenteries, Loosenesses and Hemorrhages. And very lately an antifebrile Virtue was discovered in them. This Discovery was made publick by *M. Reneaume*, a Physician of *Paris*, in the *Memoirs of the Royal Academy of Sciences*, *Ann.* 1711. They are given in Powder from ʒs. to ʒj. at the Beginning of the Fit in intermitting Fevers, in those especially, says *M. Reneaume*, which depend upon a lax Tone of the Stomach.

They are applied externally to astringe, repel, and to strengthen lax Parts. A Decoction of them is used against the bearing down of the Womb, and *Rectum*, and to prevent Fluxions upon them.

Take Galls and Pomegranate-barks, ā ʒj. Leaves of Sage, Laurel, Camomile, and Balaustines, ā. p. ij. Boil them in rough Wine and Smith's Water, q. s. and with the Decoction foment the Part affected.

They

They are very uſeful to Dyers; and are alſo an Ingredient in Ink; the beſt Method of making which is this.

Take of River-water ℔iv. White-wine ℔ij. *Aleppo* Galls bruiſed ʒiv. Macerate them for twenty-four Hours, ſhaking them now and then about in the Veſſel. Afterwards boil them for half an Hour, and remove the Scum with a Feather. Then taking the Veſſel from the Fire, add of Gum Arabick ʒiiſs. *Hungarian* Vitriol ʒij. Roch-allum and Sugar-Candy, ā ʒſs. Let them ſtand together in Digeſtion again for twenty-four Hours, afterwards boil them a Quarter of an Hour, and then ſtrain the Decoction through Linnen.

A SUPPLE-

A

SUPPLEMENT:

WHEREIN

Some Foreign PLANTS, omitted in the preceding TREATISE, are referred to the ſeveral CHAPTERS to which they reſpectively belong.

WITH

A ſhort ACCOUNT of their VIRTUES, *&c.*

A SUPPLEMENT, &c.

To CHAP. I. add

Squill.

RADIX Scillæ, Off. The Root of the Squill, or Sea-Onion, is large and bulbous, being compoſed of many Coats folding over one another. In the Shops are two Sorts, (*viz.*) The *Red*, which is the Root of the *Scilla vulgaris radice rubrâ*, *C. B.* 2. The *White*, which is generally preferred, and is got from the *Scilla radice albâ*, *C. B.* They grow by the Sea-ſide in *Spain*, *Sicily*, and other warm Countries.

Theſe Roots, uſually called *Squills*, are gently emetick and purgative; powerfully opening, attenuating, deterſive and diuretick. They are therefore good to cleanſe the Stomach, Inteſtines, and Lungs of thick viſcid Phlegm, and are very uſeful in the Dropſy, Jaundice, Cachexies, and againſt all Obſtructions ariſing from tough Humours. They are commonly given prepared in Vinegar, Oxymel, Syrup, or Wine, to ℈ſs. ʒvj. or ℈j. though ſometimes in a much larger Doſe. They are moreover reckoned alexipharmack, on which Account the Troches made of them are an Ingredient in *Venice*-Treacle.

To CHAP. III. add

LOG-WOOD.

LIGNUM tinctile Campechense, Off. Lignum Campechianum, Species quædam Brasil. Jo. de Laet, Sloane, Cat. Jam. p. 313. The Tree from which Log-wood is cut, is described by *Breynius, Prodr.* 2. 37. under this Title; *Crista Pavonis Coronillæ folio secunda, sive tinctoria Indica, flore luteo racemoso minore, siliquâ latissimâ glabrâ, Lignum rubrum* Sappan *dictum ferens.*

"This Wood (says Sir *Hans Sloane* *,) is gene-
"rally cut into Logs about a Yard in Length, and
"two or three Inches Diameter. 'Tis of a dirty
"Colour on the Outside from the Injuries of Wea-
"ther, Dirt, or Salt Water, but within is of a pale
"brown reddish Colour. 'Tis heavy, and the Outside
"or Sap of it is generally chopp'd off by those who
"cut it, thereby clearing it of what is not useful to
"Dyers.

"It is cut about the Town of *Campeche* in great
"Quantities, and brought to *Jamaica* in Sloops, to
"be sent into *Europe* by the Traders in *Jamaica.*"

It is a powerful Astringent, and a very good Medicine in Loosenesses: Wherein it is sometimes given in Decoction; but more usually reduced to an Extract, from ℈j. to ʒs. or ʒj. either in a Bolus, or diluted with some proper Vehicle, and repeated as the Case requires.

To CHAP. V. add

TOBACCO.

FOLIUM Nicotianæ, Off. The officinal Tobacco is the Leaf of the *Nicotiana major latifolia,*

* *Natural History* of *Jamaica,* Vol. II. p. 183.

folia, *C. B.* It grows naturally in *Braſile* and ſome *American* Iſlands, and is alſo very much cultivated in thoſe Parts. It is likewiſe ſown in our Gardens, and flowers in *July* and *Auguſt*.

Tobacco is narcotick and anodyne, occaſioning Drowſineſs and eaſing Pains, particularly the Tooth-ache, if chewed in the Mouth or ſmoked in a Pipe. If taken into the Stomach it proves violently emetick and cathartick: Yet ſome have attempted to deprive it of theſe bad Qualities, and not without Succeſs. To this End, *Quercetan* directs its Juice to be digeſted in Hydromel and Oxymel for two or three Days, and then to be made into a Syrup; which he, and others, greatly commend to incide and deterge tough Phlegm, in Aſthmas and ſtubborn Coughs. The Doſe is from half a Spoonful to a whole one, for ſeveral Days ſucceſſively. An Infuſion of Tobacco is recommended by ſome Authors to be injected by way Clyſter in ſleepy Diſorders; but, when thus uſed, it ſometimes brings on Convulſions, Vomitings, Tremblings, cold Sweats, and other bad Symptoms, which in a ſhort Time, if not remedied, generally terminate in Death. It is of Service, either ſmoked, chewed, or taken in Snuff, to People of cold or phlegmatick Temperaments, or who are ſubject to Defluxions. It requires, however, to be uſed with Diſcretion: For a learned Author * informs us, that an immoderate Uſe of it emaciates the Body, frequently cauſes a ſudden Death, and always impairs the Memory.

The freſh green Leaves, boiled in Oil and made into an Unguent, are very good to deterge and cleanſe old Sores or Ulcers. They are likewiſe advantageouſly applied, in Plaiſters, to reſolve hard Swellings.

* *Chomel, Abrege de l'Hiſtoire des Plantes uſuelles. T. I. p.* 128.

To

To CHAP. VI. add

ALMONDS.

AMYGDALÆ dulces and *Amygdalæ amaræ*, *Off.* ſweet and bitter Almonds of the Shops. Theſe are too well known to need Deſcription. They ought to be choſen ſmooth on the Outſide, and very white within; for when they are wrinkled, and turning yellow, they are unfit for Uſe, being ſtrong and rancid. They are the Kernels of a Fruit, ſomething like a ſmall Peach. The Trees to which the officinal Almonds belong are diſtinguiſhed, from the Taſte of the Kernel, into *Amygdalus dulcis*, the Sweet Almond-tree, *J. B.* 1. 174. And *Amygdalus amara*, the Bitter Almond-tree, *C. B. P.* 441. They grow in *Barbary*, *Spain*, *Languedoc*, and other warm Climates.

Sweet Almonds are ſoftening, pectoral, and nutritive, but hard of Digeſtion; being apt to ſtuff up the Stomach, and, if not well chew'd, to paſs through the Inteſtines unaltered. They are moſtly given in Emulſions, in which Form they abate the Heat of the Humours, by obtunding their Acrimony; and are therefore thus preſcribed in ardent Fevers, Wakefulneſs, Heat of Urine, Inflammations of the Kidneys and Bladder; Pains, Looſeneſſes, Dyſenteries, Hemorrhages, and ſuch like Diſorders. Emulſions prepared from them are likewiſe very ſerviceable to conſumptive People, eſpecially when inclined to ſweat.

The expreſſed Oil efficaciouſly ſoftens and relaxes the Fibres, and blunts the Acrimony of the Humours. It is given in inflammatory Diſeaſes, in nephritick and colick Pains, in Dyſenteries, and Coughs; as alſo againſt Dryneſs or Coſtiveneſs of

the

the Belly. The uſual Doſe is from ʒſs. to ʒj. and from ʒj. to iv. in Clyſters.

Bitter Almonds are accounted inciding, deterſive, opening, diuretick, and good to kill Worms; but they are ſeldom taken by Reaſon of their Bitterneſs. Their expreſſed Oil, being drank from ʒſs. to ʒj. in Broth, is ſaid to provoke Urine, looſen the Belly, help ſpitting, and to diſcuſs Wind. Externally it is commended to reſolve inflamed Swellings of the Tonſils, and others, and to mitigate Pains. It ſoftens and looſens hard Ear-wax occaſioning Deafneſs, and for this Purpoſe is ſometimes dropt upon Cotton and put into the Ears; but if the Deafneſs proceed from another Cauſe it is improper; for *Hoffman* obſerves, that it very often relaxes the Membrane of the Drum, and ſo increaſes the Diſorder. Moreover, the Oil of bitter Almonds is uſed as a Coſmetick to take Tan and Freckles off the Face; and, mixed with the Oil of Eggs, it prevents Pitting in the Small-Pox.

The WILD CUCUMBER.

Cucumis agreſtis, *Off.* The wild Cucumber is about an Inch and Half or two Inches long, rough on the outſide, having a great Number of ſmall Protuberances with harmleſs Prickles ſtanding upon them; within divided into three Cells, wherein is contained a bitter Pulp with ſeveral broad, ſmooth and dark colour'd Seeds; which, when the Fruit is quite ripe, upon preſſing it gently with the Hand, immediataly ſquirt forth to a conſiderable Diſtance. The Plant which produces it is the *Cucumis Sylveſtris aſininus dictus*, C. B. P. 314. It grows ſpontaneouſly in the Southern Parts of *France* by the Way ſides, and with us is planted in Gardens.

This Plant abounds with both a thick and thin Sulphur, a copious ammoniacal Salt, with a moderate Quantity of nitrous Salt. The whole Plant, when dried and thrown upon Gledes, flashes as if replete with Nitre, and disperses a fœtid Smell from its thick Oil.

All Parts of the Plant are strongly cathartick; but more especially the Fruit, which purges upwards and downwards with great Violence. Its expressed Juice, inspissated by Evaporation, is the *Elaterium* of the Shops, which many Physicians extol for purging off the Water in Dropsies; but its Operation is so extremely vehement, that it ought not to be used but with the greatest Caution. The Dose is commonly confined between gr. ss. and gr. v. though the Ancients, and also some modern Authors have ordered it in a much larger Quantity. However, it is safest in the Beginning to prescribe it only from gr. ss. to gr. ij. as a *Stimulus* to other Purgatives, and corrected with Stomachicks, and afterwards to increase the Dose gradually according to its Effects, and the Strength of the Patient.

OLIVES.

Olivæ, Off. Olives are a Fruit of an oval Figure, and different Magnitude, some being as big as a large Plum, according to *Mr. Miller* *, and others a great deal less, having a long pointed Stone in the Middle. When they come to us in Pickle or Brine they are generally of a greenish Colour, but if suffered to hang upon the Tree till quite ripe, they become black, and very hot in the Mouth. The Tree which bears the officinal Olives is the

* *Botan. Officin.* p. 319.

Olea

Olea Sativa, C. B. It grows in *Spain*, *Provence*, *Italy*, and other warm Climates.

Pickled Olives, being eaten before Meals, ſays *Schroder*, provoke an Appetite, raiſe and comfort a moiſt Stomach, and move the Belly. But I have here inſerted this Fruit on account of its Oil, expreſſed from it when ripe; which is not only uſed in Salads and other Diſhes at Table, but is of great Service in many Purpoſes of Phyſick. It looſens the Belly, ſoftens ſharp Humours, lubricates and relaxes the Fibres; is uſeful in Diſorders of the Breaſt, in Coughs, Pleuriſies, and other Inflammations; gives Relief in the Colick, Dyſentery and *Teneſmus*; and helps the Stone and Gravel. It has likewiſe a ſovereign Efficacy for preventing the Corroſion, and fatal Conſequences of many Poiſons; as alſo againſt Super-purgations, and other bad Effects from acrimonious Purgatives: But in theſe Caſes it ought to be given in large Quantities by the Mouth, and to be injected plentifully in Clyſters.

Externally it ſoftens Tumours and promotes Suppuration, and being beaten up with Wine makes a good Liniment for Burns. It is uſed in many Cerates, Plaiſters, and Unguents of the Shops.

The *Oleum Omphacinum*, which, as many report, is expreſſed from unripe Olives, ſeems to be rather a mucilaginous Juice than an Oil; becauſe, before the Olives are ripe no Oil can be got from them. For this Reaſon, ſome Authors ſuppoſe that the *Oleum Omphacinum* of the Ancients was factitious, (viz.) that it was made by infuſing ſome aſtringent Subſtances in common Oil.

PRUNES.

Prunæ Gallicæ, *Off.* Theſe are brought from *France*, where they grow upon the *Prunus Sativa*, J. B. *Prunus*, C. B. They are cooling and moiſtening. They temper the Acrimony of the Humours, and alſo looſen the Belly, and are therefore put into the Lenitive Electuary. They are ſometimes infuſed with Sena, to render its Taſte more agreeable to Children, and People of weak Stomachs.

ANISEED.

Semen Aniſi, *Off.* This is a ſmall ſtriated Seed, of a greeniſh Colour, a pleaſant Smell, and a warm ſweet Taſte. The Plant which bears it is the *Aniſum Herbariis*, C. B. *Apium Aniſum dictum*, *Inſt. R. H.* The Seed is ſown in *France* and *Germany*, but the beſt is ſaid to come to us from *Spain*.

This Seed abounds with an acid Salt involved in a large Quantity of Oil, and hence ariſes its ſweet Taſte.

It is one of the four greater hot Seeds: the other three are Cummin, ſweet Fennel, and Caraway.

The Ancients have commended the Seed of Aniſe as an excellent Remedy for cold and moiſt Stomachs; and it is given with Succeſs to help Digeſtion and prevent Crudities. It hinders the Milk from curdling in the Breaſts of Nurſes; and increaſes its Quantity very much, if boiled and drank in Cow's Milk. In the Gripes of young Children it is very beneficial; as alſo in their Convulſions ariſing from bad Humours in the Bowels, and on this account *Helmont* terms it *Solamen inteſtinorum.*

Heurnius aſſerts that ℈j. powdered and given to Children in their Pap, purges them as effectually as Rhubarb does older People. It

likewiſe provokes Urine and the *Menſes*; and in Hoarſeneſs, Coughs, Aſthmas, and other Diſorders of the Breaſt and Lungs proceeding from thick crude Humours, it is of very great Service; inſomuch that ſome have called it *Anima Pulmonum*. Moreover it is often joined to Catharticks to prevent their Griping. The Doſe in Powder is from ℈j. to ʒj.

Its Oil is obtained either by Expreſſion, or by Diſtillation. The expreſſed Oil may be given to gut. xx. and the diſtilled Oil from gut. ij. to x. They have both the ſame Virtues with the Seed in Powder. With the Oil obtained by Expreſſion is prepared the *Balſamum Sulphuris Aniſatum*, which, in Coughs, Shortneſs of Breath, and Aſthmatick Complaints, is no contemptible Remedy. The diſtilled Oil is ſometimes rubbed upon Childrens Navels to eaſe the Gripes; and is uſed to correct ſome purging Pills. It is alſo to allay colick Pains put into Clyſters, in which the Seed or other Ingredients have been boiled.

The Seed of BISHOP'S WEED.

Semen Ammeos, *Off.* This is a ſmall Seed leſs than Parſley-ſeed, of an acrid bitteriſh Taſte, and fragrant Smell. The Plant which produces the ſort now uſed in the Shops is the *Ammi majus*, C. B. *Ammi vulgare majus latioribus foliis*, *Semine minus odorato*, J. B. It grows common in *France*, and in moſt warm Countries.

This is one of the four leſſer hot Seeds. It is drying, ſtomachick and good to expel Wind, and is ſerviceable in Obſtructions of Urine, or the *Menſes*. Some Authors commend it againſt Barrenneſs in Women; and *Simon Paulli* accounts it an efficacious Medicine for the *Fluor albus*. The uſual Doſe is from ℈j. to ʒj. in Powder.

Carrot-Seed of CANDY.

Semen Dauci Cretici, Off. This is an oblong ſtriated Seed, pointed at both Ends, but more at one than the other, and ſwelling in the Middle. It is covered with a kind of hoary Down, and has a pleaſant, though gentle, Smell, and an hot aromatick Taſte. The Plant which bears it is the *Daucus foliis Fœniculi tenuiſſimis*, C. B. P. *Daucus Creticus Semine hirſuto*, J. B. It grows plentifully in *Candy*, upon the *Alps* of *Germany*, and in many eaſtern Countries.

This Seed abounds with an aromatick oily Salt, and yields a copious eſſential Oil in Diſtillation.

It is one of the four leſſer hot Seeds. It attenuates and incides thick tough Humours, expels Wind, opens Obſtructions, and provokes the *Menſes*, and Urine. It is commended for the Stone and Gravel; Stranguries, chronical Coughs, Hickups, and flatulent Colicks; and being infuſed to ʒij. in white Wine, and taken at a Draught, is of great Service for removing hyſterick Fits, and other uterine Diſorders. It is alſo reckoned alexipharmack, and is therefore an Ingredient in *Venice* Treacle and Mithridate. It may be given in Powder from ℈j. to ʒj.

CUMMIN-SEED.

Semen Cymini, Off. This is a ſtriated Seed about a Quarter of an Inch long, of an aſhy Colour tending to a yellowiſh brown, of a warm bitteriſh Taſte, and ſtrong Smell. The Plant to which it belongs is the *Cuminum Semine longiore*, C. B. P. *Cuminum ſive Cyminum ſativum*, J. B. *Fœniculum*

orientale, *Cuminum dictum*, *Inſt. R. H.* It is ſown in great abundance in the Iſland of *Malta*.

Cummin-Seed, in a chymical *Analyſis*, affords a large Quantity of Oil, and of Phlegm both acid and urinous. It therefore contains an aromatick, oily ammoniacal Salt.

It helps the Concoction of Food, and diſcuſſes Wind; is very ſerviceable in the flatulent Colick, Tympany, and Giddineſs ariſing from bad Digeſtion, either internally or externally; Though for internal Uſe Caraway-Seed is commonly preferred, as being more agreeable.

Cummin-Seed is often applied in Plaiſters, to remove Pains in the Sides, Breaſt, Stomach and Belly; and is frequently put into carminative Clyſters.

Its eſſential Oil is preſcribed to gut. iij. in Diſorders proceeding from Wind; and is ſometimes dropped upon hot Bread, and applied to the Navel.

Sweet FENNEL SEED.

Semen Fœniculi dulcis, *Off.* This is a long ſtriated Seed, much larger than that of the common Fennel; as alſo of a paler Colour, and ſweeter Taſte. The Plant producing it is the *Fœniculum dulce*, C.B P. *Fœniculum dulce majore et albo Semine*, J. B. It grows in moſt Southern Countries, but the Seed is ſaid to come to us from *Germany*.

It is carminative, ſtomachick, pectoral, diuretick, and ſudorifick. It gives great Eaſe in colick Pains, expelling Wind both upwards and downwards: Whence this common Adage,

Semen Fœniculi reſerat Spiracula Culi.

It incides thick ſlimy Humours in the Stomach,

and is of great Service in difficult Digeſtion, taken either before or after Meals. *Simon Paulli* extols its Virtues in putrid and malignant Fevers, and ſays nothing is preferable to a Decoction of it in the Meaſles and Small-Pox. It increaſes the Milk of Nurſes, and, being mixed with Pectorals, relieves aſthmatick Complaints, and ſtubborn Coughs. It is alſo wonderfully commended for preſerving the Sight, and repairing it when decayed. The uſual Doſe is from ℈j. to ʒj. It is ſometimes employed to correct purging Medicines. On account of its ſudorifick Virtue it is an Ingredient in *Venice* Treacle and Mithridate; and a Water is diſtilled from it, which is kept in the Shops, and preſcribed as a Diuretick.

Externally it is uſed to good Advantage in diſcutient Cataplaſms and Fomentations.

An eſſential Oil is diſtilled from it, which, from gut. vj. to xij. received upon Sugar and diſſolved in Wine, is an excellent Carminative, powerfully diſcuſſing Wind in the Colick. It likewiſe promotes Digeſtion, and being taken in a pectoral Decoction is ſerviceable in Coughs and Aſthmas.

FENUGREEK-SEED.

Semen Fœni Græci, *Off.* This Seed is of a moderate Size, and rhomboidal Figure, with a Groove, and ſlight Furrow running obliquely from Corner to Corner. It has a yellowiſh Colour, a mucilaginous Taſte, and ſtrong Scent, though ſomething pleaſant to many People. The Tree upon which it grows, in a long ſlender Pod, ſomewhat flat and crooked, is the *Fœnum Græcum Sativum*, C. B. P. It is ſown in many foreign Countries in the Fields, but the Seed is brought to us moſtly from *Germany*.

This

This Seed ſeems to conſiſt of an ammoniacal Salt enveloped in a large Quantity of Sulphur, both thick and thin, and a copious Earth: Whence ariſes a mucilaginous Compound, which may be drawn from it by Coction.

It ſoftens Tumours, digeſts, ripens, and diſcuſſes, and alſo allays Pains. Its uſe is ſo common, that it is put into moſt emollient, ripening, or diſcutient Fomentations and Cataplaſms, being either reduced to Meal, or boiled in Water to a Mucilage. It is advantageouſly preſcribed in emollient, carminative and anodyne Clyſters, to diſcuſs Wind, obtund the Acrimony of the Humours, and cover the Inteſtines deprived of their Mucus, in Colicks, Looſeneſſes, and Dyſenteries. But *Simon Paulli* obſerves that its Smell is very offenſive to ſome Women, particularly to ſuch as are hyſterical, and therefore that it ought not to be inconſiderately put into Clyſters for that Sex. The Mucilage extracted from it by Water is of Service to Blood-ſhot Eyes, and both *Simon Paulli* and *Riverius* commend it in Ophthalmies.

HARTWORT-SEED.

Semen Seſelis, Off. This is an oblong ſtriated Seed, with a foliaceous Border on each Side, of a greeniſh brown Colour, a fragrant Smell, and an acrid, bitteriſh, aromatick Taſte, ſomething like a Mixture of Orange-Peel and Cummin Seed. The Plant to which it belongs is the *Liguſticum quod Seſeli Officinarum*, C. B. *Siler montanum vulgare*, J. B. It grows upon the *Alps*, upon the Hills in ſome Parts of *France*, and other warm Countries.

The Seed of Hartwort is heating and drying, provokes the *Menſes* and Urine, and expels Wind. *Dioſcorides* directs it to be given in Wine to aſſiſt Digeſtion,

Digeſtion, and to appeaſe Gripings of the Bowels. He likewiſe recommends it againſt hyſterical Affections, and Epilepſies; and moreover tells us that it forwards the Birth and After-birth: but it is not much uſed, unleſs in *Venice* Treacle and Mithridate.

Macedonian PARSLEY-SEED.

Semen Petroſelini Macedonici, *Off.* This is a Small ſtriated Seed, ſomewhat villous, of a dark green Colour, according to *Dale*, and an acrid aromatick Taſte, and fragrant Smell. The Plant which bears it is the *Apium Macedonicum*, C. B. *Apium ſive Petroſelinum Macedonicum*, J. B. It grows upon rocky mountainous Places in ſome warm Climates, and is ſown here in Gardens, but produces very little Seed.

The Seed of *Macedonian* Parſley is warm and carminative, and provokes Urine and the monthly Purgations. It is attenuating, aperient, and alexipharmack; and is therefore, ſays *Schroder*, an Ingredient in *Venice* Treacle.

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PAGE 53. line 17. and p. 58. l. 7. for *with*, read *in*. p. 63. l. 29. r. *both the* Indies. p. 78. l. 31. f. *the Experiment he had made*, r. *the Means of his Cure*. ib. l. 33. dele *Remedy*. p. 113, l. 2. dele *a*. p. 130. l. 13. r. *into*. p. 132, l. 14, r. *piperine*. p. 151, l. 35, f. *Loſs of*, r. *loſt*. p. 165, l. 18, r. *nauſeas*. p. 171, l. 31. r. *Alhandal*. p. 194, l. 16, r. *ſomewhat*. p. 197, l. 33, f. *the three Sorts which are at this time in the Shops*, *under theſe Names*, r. *thoſe three Species*, *which are ſtill found in the Shops*. p. 199, l. 8, r. *Birch-tree*. p. 210, l. 7, f. *Ounces*, r. *Pounds*. p. 216, l. 32, f. *while*, r. *little*. p. 240, l. 17, r. *put on*. p. 243, l. 26, r. *pouring*. ibid. l. 31, r. *Nitre*. p. 258, l. 9. f. *as well*, r. *both*. ib. f. *as*, r. *and*. p. 276, l. 4, r. *Cold*. p. 289, l. 11, dele *a*. p. 328, l. 2. f. *The*, r. *A*. p. 330, l. 31, r. *Aſſes or Woman's Milk*.